

In the Matter Of:

In Re: RMP - Sustainable Transportation and Energy Plan Act

HEARING, DOCKET NO. 16-035-36

May 23, 2017

Job Number: 377722

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

IN THE MATTER OF THE APPLICATION
OF ROCKY MOUNTAIN POWER TO
IMPLEMENT PROGRAMS AUTHORIZED
BY THE SUSTAINABLE TRANSPORTATION
AND ENERGY PLAN ACT

Docket No. 16-035-36

HEARING PROCEEDINGS

TAKEN AT:	Public Service Commission 160 East 300 South, Room 403 Salt Lake City, Utah
DATE:	May 23, 2017
TIME:	9:00 a.m.
REPORTER:	Ariel Mumma, CSR/RPR

Job Number: 377722

1 A P P E A R A N C E S

2

THE HEARING OFFICER:

3

Mr. Michael Hammer

4

FOR CHARGEPOINT UTAH:

5

Mr. Steve Mecham

CHARGEPOINT

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8 FOR THE DIVISION OF PUBLIC UTILITIES:

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11 FOR THE OFFICE OF CONSUMER SERVICES:

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14 FOR ROCKY MOUNTAIN POWER:

15

Mr. Daniel E. Solander

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Salt Lake City, Utah 84116

17 FOR THE SIERRA CLUB (appearing by phone):

18

Mr. Joe Halso

SIERRA CLUB

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20 FOR UTAH CLEAN ENERGY:

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1 May 23, 2017; 9:00 a.m.

2 P R O C E E D I N G S

3

4 HEARING OFFICER: Let's go on the record,
5 please.

6 Good morning, everyone. This is the time
7 and place noticed for a hearing, a Phase III hearing
8 "In the Matter of the Application of Rocky Mountain
9 Power to Implement Programs Authorized By the
10 Sustainable Transportation and Energy Plan,"
11 Commission Docket Number 16-035-36.

12 My name is Michael Hammer, and I am the
13 Commission's designated presiding officer for this
14 hearing. Let's go ahead and take appearances, please.

15 MR. JETTER: And what -- I'm Justin Jetter
16 with the Utah Attorney General's Office. I'm here
17 today representing the Utah Division of Public
18 Utilities, and with me at counsel table is the
19 witness, Robert A. Davis.

20 MR. SNARR: Good morning. My name is
21 Steven Snarr. I'm assistant attorney general
22 representing the Office of Consumer Services. With me
23 at the table is Cheryl Murray, one of the witnesses
24 for the Office, and we also have available Jason
25 Thomas on the telephone, who is one of our witnesses

1 who will be participating telephonically with us to
2 the extent that may be necessary.

3 HEARING OFFICER: Thank you.

4 MR. MECHAM: Steve Mecham representing
5 ChargePoint, Inc., and our witness, Mr. James Ellis,
6 will be participating by telephone.

7 MS. HAYES: Good morning. Sophie Hayes on
8 behalf of Utah Clean Energy. With me at counsel table
9 is Miss Sarah Wright, who is one of our witnesses, and
10 also appearing will be Mr. Kevin Emerson, who will be
11 making a statement in support of the stipulation.

12 MS. GARDNER: Good morning. Jennifer
13 Gardner representing Western Resource Advocates, and
14 with me at the counsel table is Kenneth L. Wilson, who
15 is our witness in this case of the docket. Thank you.

16 HEARING OFFICER: Okay. In terms of the
17 order of the presentation of evidence, I thought we'd
18 start with --

19 MS. HAYES: Excuse me, Mr. Hammer. I was
20 under the impression that Mr. Joe Halso might also be
21 appearing via the phone. Did he make an appearance?

22 THE CLERK: No.

23 HEARING OFFICER: No.

24 MS. HAYES: Okay.

25 HEARING OFFICER: And in terms of the

1 order of the presentation of evidence, I thought we'd
2 start with the Company since it's the Company's
3 application. My instinct would be to then proceed
4 with the Division and the Office, and then turn to the
5 Intervenors. I don't know if you have a preference as
6 to who goes first among the Intervenors --

7 MR. JETTER: One thing some of the parties
8 had discussed, Mr. Hammer, was maybe doing testimony
9 in support of the stipulation first, from all
10 parties --

11 HEARING OFFICER: Okay.

12 MR. JETTER: -- so the company would go,
13 and the Division, and so on; and then after that is
14 concluded, then moving on to the time-of-use rates
15 portion.

16 HEARING OFFICER: That's fine with me.
17 We'll still need to decide who goes first among the
18 Intervenors.

19 Mr. Mecham, are you comfortable going
20 first?

21 MR. MECHAM: I'm fine. We're really just
22 presenting the testimony and putting it on the record,
23 and supporting the stipulation.

24 HEARING OFFICER: Okay. And then we'll
25 proceed to Ms. Hayes and Ms. Gardner?

1 Okay.

2 And do we anticipate there will be
3 cross-examination? I think there will likely be on
4 the time-of-use portion, no?

5 MR. SOLANDER: It's probable, yes.

6 HEARING OFFICER: Okay. So it's best --
7 probably at least for that portion, we'll let the
8 witnesses take the witness stand.

9 I'll allow counsel to decide whether you
10 want your witnesses to take the stand when we testify
11 as to the stipulation.

12 Anything else before we begin?

13 All right. Mr. Solander, please call your
14 first witness.

15 MR. SOLANDER: Thank you. Rocky Mountain
16 Power calls William Comeau in support of the
17 stipulation, and also he'll be testifying regarding
18 the Company's proposed Electric Vehicle Time-of-Use
19 Program that led up to the stipulation.

20

21 WILLIAM COMEAU,
22 called as a witness, having been duly sworn,
23 was examined and testified as follows:

24

25 HEARING OFFICER: And I'm sorry, my

1 instructions weren't clear. You're welcome to take
2 the stand, if you like, but during this portion,
3 first, if you'd prefer to stay seated and if no one
4 has any objection, that's fine as well.

5 Go ahead, Mr. Solander.

6 MR. SOLANDER: Thank you.

7

8 DIRECT EXAMINATION

9 BY MR. SOLANDER:

10 Q. Would you please state and spell your name
11 for the record.

12 A. William Comeau, W-i-l-l-i-a-m,
13 C-o-m-e-a-u.

14 Q. And what is your current position with
15 Rocky Mountain Power?

16 A. I'm the director of customer solutions.

17 Q. And as the director of customer solutions,
18 did you file direct testimony in Phase III of this
19 proceeding?

20 A. I did.

21 Q. And do you have any corrections or
22 additions to your testimony, or the exhibits that you
23 filed with that testimony?

24 A. I do not.

25 Q. So if I asked you those same questions

1 today, each of your answers would be the same?

2 A. That's correct.

3 MR. SOLANDER: I'd move at this time the
4 admission of Mr. Comeau's direct testimony and
5 exhibits coming in.

6 HEARING OFFICER: They're admitted.

7 MR. SOLANDER: Thank you.

8 Q. And Mr. Comeau, did you also participate
9 with all the other parties in the negotiation of the
10 stipulation regarding the Company's Electric Vehicle
11 Incentive Program?

12 A. I did.

13 Q. And do you have a statement in support of
14 the stipulation that was agreed to by the Company and
15 all of the parties?

16 A. I do.

17 Q. Please proceed.

18 A. Okay. Well, on May 10th, 2016, the
19 Company met with interested parties to provide
20 background information on electric-vehicle adoption in
21 Utah, and discussed concepts for consideration in
22 developing a plug-in electric-vehicle program.

23 On September 12th, 2016, the Company filed
24 an application to implement programs authorized by the
25 Sustainable Transportation and Energy Plan Act,

1 including a request for authorization of funding for a
2 plug-in Electric Vehicle Incentive Program, and a
3 proposal to start a series of working group
4 discussions with interested parties to advise on the
5 development of a time-of-use program in conjunction
6 with the plug-in Electric Vehicle Incentive Program.

7 On January 31st, 2017, after holding
8 several working group discussions, the company filed
9 its supplemental application to implement plug-in
10 electric-vehicle incentives and time-of-use programs,
11 together with supporting testimony.

12 The proposed plug-in electric-vehicle
13 program offers incentives for participation and
14 time-of-use rates, non-residential, and low-impact
15 family AC Level 2, and DC fast chargers, and a custom
16 offering for grant-based projects and partnerships.

17 The proposed time-of-use program offers
18 customers with plug-in electric vehicles the choice of
19 different rate options that promote off-peak charging.
20 The time-of-use program also incentivizes (sic)
21 customers to participate in a load research study
22 which will help the Company to better understand
23 charging behaviors for plug-in electric vehicles.

24 On April 6th, 2017, intervening parties
25 submitted direct testimony in response to the

1 Company's supplemental application and proposed
2 programs. On April 27th, 2017, the Company filed
3 rebuttal testimony with revisions to its proposed
4 programs based on recommendations contained in
5 intervening parties' direct testimony.

6 On May 16th, 2017, the parties filed a
7 stipulation and partial settlement agreement of
8 Phase III issues. Parties to the stipulation have
9 agreed on all components of the plug-in
10 electric-vehicle incentive and time-of-use programs as
11 described in the stipulation, except for the
12 time-of-use rate options and on-/off-peak time
13 periods.

14 The Company shall guarantee against an
15 increase of customer costs on the time-of-use rate
16 schedule for the first 12 months of enrollment. If
17 the total annual energy costs incurred in the
18 time-of-use rate schedule exceed 10 percent over what
19 costs would have been for the same period under
20 Schedule 1 rates, the net difference will be credited
21 on the customer's bill following the last month of the
22 one-year commitment.

23 The parties agree to the proposed maximum
24 and initially-offered incentive levels described in
25 the Company's rebuttal testimony for AC Level 2, and

1 DC fast chargers.

2 The Company agrees to meet with interested
3 parties after the first year of operation to evaluate
4 applications and award incentives, and evaluate
5 whether changes to outreach or incentives are
6 warranted. The Company will also provide a status
7 update to interested parties in the first quarter of
8 2018.

9 The time-of-use load research study will
10 be limited to residential customers who indicate they
11 have an AC Level 2 charger, and will require
12 participation for one year.

13 The Company agrees to keep the load
14 research meters in place beyond one year, and collect
15 data for study participants for the duration of the
16 time-of-use program.

17 The Company further agrees to meet with
18 interested parties to review initial load research
19 study results between Month 9 and 12 of the study
20 period, to discuss what actions and costs, if any,
21 would be necessary to ensure a meaningful study.

22 The signing parties believe the
23 stipulation is in the public interest, and
24 respectfully request the Commission approve the
25 stipulation as filed.

1 ROBERT A. DAVIS,
2 called as a witness, having been duly sworn,
3 was examined and testified as follows:
4

5 HEARING OFFICER: Thank you.
6

7 DIRECT EXAMINATION

8 BY MR. JETTER:

9 Q. Mr. Davis, would you please state your
10 name and occupation for the record.

11 A. My name is Robert A. Davis. I'm a utility
12 analyst for the Division of Public Utilities.

13 Q. Thank you. And in the course of your
14 appointment with the Division, have you had the
15 opportunity to review the filings and prefiled
16 testimony of this docket?

17 A. I have.

18 Q. And have you also had an opportunity to
19 review the -- it's titled "Stipulation and Partial
20 Settlement Agreement" that's been filed and signed by
21 the parties in this docket?

22 A. I have.

23 Q. And what is your opinion of the settlement
24 and stipulation?

25 A. The parties reached a settlement on all

1 issues except the time-of-use rates, and time periods
2 for the pilot. The Division signed and supports the
3 stipulation.

4 Q. And do you believe approval of the
5 stipulation, as it's been presented to the Commission,
6 would be just, reasonable, and in the public interest?

7 A. I do.

8 MR. JETTER: Thank you.

9 I have no further questions of Mr. Davis.
10 He is available for cross-examination.

11 HEARING OFFICER: Does any party have
12 questions for Mr. Davis?

13 MR. MECHAM: None.

14 MR. SNARR: None.

15 HEARING OFFICER: Thank you, Mr. Jetter.

16 Thank you, Mr. Davis.

17 Mr. Snarr?

18 MR. SNARR: Yes, on behalf of the Office
19 we'd like to present Cheryl Murray as a witness, and
20 we can do that right here at the table, if that's all
21 right.

22 HEARING OFFICER: Of course.

23 *

24 *

25 *

1 CHERYL MURRAY,
2 called as a witness, having been duly sworn,
3 was examined and testified as follows:

4
5 HEARING OFFICER: Thank you.

6
7 DIRECT EXAMINATION

8 BY MR. SNARR:

9 Q. Please state your name, business address,
10 and for whom you work.

11 A. My name is Cheryl Murray. My address is
12 160 East 300 South, Salt Lake City. I work for the
13 Office of Consumer Services.

14 Q. With respect to this case and this
15 particular phase, did you prepare evidence -- or
16 testimony to be submitted?

17 A. Yes, I did.

18 Q. And did you submit direct testimony
19 consisting of 18 pages filed on April 6th, 2017, as
20 well as rebuttal testimony consisting of 14 pages
21 filed on April 26th, 2017, and surrebuttal testimony
22 consisting of six pages filed on May 16th, 2017?

23 A. Yes.

24 Q. Do you have any changes to your testimony
25 at this time?

1 A. Yes, I do.

2 Q. With respect to direct testimony, could
3 you tell us what changes have you made?

4 A. Certainly.

5 Page 3 Line 49: Change "two witnesses" to
6 "one witness." The corrected line should read, "The
7 office has one witness in addition to myself."

8 Page 3: Strike Lines 50 through 52, which
9 reads "1. Mr. James Daniel will address the rate
10 design and other elements of Rate Options 1 and 2,
11 components of the Company's proposed ED TOU pilot."

12 On that same page, Line 53: Strike the
13 number "2."

14 On Page 15, Line 313: Strike everything
15 after the word "Yes," which would be as identified in
16 the direct testimony of Mr. Daniels at Lines 261 to
17 269.

18 On Page 15, Line 314: Capitalize the
19 letter "I" in the first word, "In."

20 Q. Do you have any changes to your rebuttal
21 testimony?

22 A. Yes, I do.

23 Q. Would you present them.

24 A. Yes.

25 Page 8 Line 178: Remove the word, "our,"

1 and replace with the word "a."

2 Page 14, Line 299: Strike the words "as
3 proposed by the Office in direct testimony."

4 Those are all my changes.

5 Q. Thank you.

6 Do you have a statement in support of the
7 settlement that has been referenced?

8 A. Yes, I do.

9 Q. Could you present that at this time?

10 A. Yes.

11 Q. Did you participate in the settlement
12 discussions?

13 A. I did.

14 Q. Does the Office support the settlement as
15 filed?

16 A. Yes, we do.

17 Q. Do you have some testimony to provide in
18 support of that settlement?

19 A. Yes.

20 In my direct testimony I recommended
21 several minor modifications to the tariff, which the
22 Company accepted in its rebuttal testimony. Since
23 that time, through discussion and negotiations,
24 further modifications have been made to the tariff,
25 and are included in the tariff attached to the

1 stipulation.

2 Some of the important tariff changes
3 include the following: As originally filed,
4 Schedule 120, in the "Special Conditions" sections for
5 AC Level 2 charger prescribed incentive, and DC
6 fast-charger prescribed incentives, indicated that
7 customers who received an incentive may be required to
8 consent by charger usage status.

9 In Schedule 21 filed with the stipulation
10 on May 15, consent to provide charger usage data is
11 now identified as a requirement for receiving an
12 incentive. A similar requirement now also exists for
13 customer projects and partnership incentives, if
14 applicable.

15 In direct testimony the Office recommended
16 that the Company should create a new tariff related
17 specifically to load research study participants. In
18 the rebuttal testimony of Mr. Robert Meredith, the
19 Company accepted the recommendation and provided such
20 a tariff. In negotiations, the parties agreed to that
21 tariff language with certain modifications, which are
22 included in Schedule Number 121 attached to the
23 stipulation.

24 In addition to the tariff changes, the
25 settlement stipulation contained several key elements

1 important to the Office, such as the additional
2 reporting requirements memorialized in Exhibit D EZ
3 TOU pilot report requirements agreement regarding
4 ongoing meetings, and load research issues.

5 In my direct testimony I suggested that
6 additional technical conferences be required to
7 provide specific information regarding outreach and
8 education, and to explain the results of the Company's
9 RFP.

10 In the stipulation, parties agreed to meet
11 to discuss a number of issues of concern to the Office
12 and others. Although not set as a technical
13 conference, the Office is satisfied that this will
14 provide the opportunity to obtain the information we
15 were seeking.

16 I would also note that these meetings will
17 provide an opportunity to explore whether changes to
18 the incentives are warranted, and provide a forum to
19 address some of the issues raised by parties that
20 could not be included in the subtle design of the
21 program at this time.

22 The design of the load research study is a
23 major issue for the Office. Our primary concern was
24 that obtaining survey information from both Level 1
25 and Level 2 residential chargers would not provide

1 statistically significant information without further
2 stratification by type of charger.

3 The stipulation requires the residential
4 load research participants will be required to have AC
5 Level 2 chargers. Limiting the load research study to
6 only those with AC Level 2 chargers alleviates our
7 concern and eliminates the need for additional
8 stratification.

9 Taken as a whole, the Office believes that
10 the stipulation is in the public interest, and
11 recommends that the Commission approve it.

12 **Q. Does that conclude your statement?**

13 A. Yes. It does.

14 MR. SNARR: At this time we'd like to move
15 the admission of exhibits that the Office sponsors.
16 There are three exhibits identified as direct,
17 rebuttal, and surrebuttal testimony with -- submitted
18 by Cheryl Murray.

19 We also have the direct testimony of
20 Mr. Jacob Thomas, and one exhibit, and we'd like to
21 move those into evidence as well. His testimony
22 primarily is directed at the issues that were
23 addressed and resolved by way of the stipulation.

24 HEARING OFFICER: Thank you, Mr. Snarr.
25 They're admitted.

1 Does any party have any cross-examination
2 for Ms. Murray on the stipulation?

3 Anything else, Mr. Snarr, at this time?

4 MR. SNARR: Nothing else.

5 HEARING OFFICER: Thank you.

6 Mr. Mecham.

7 MR. MECHAM: Thank you, Mr. Hammer.

8 ChargePoint would call Mr. James Ellis
9 (appearing by phone).

10 MR. MECHAM: Mr. Ellis, can you hear me?

11 MR. ELLIS: Yes, I can hear you. I'm
12 having a hard time hearing all of the discussion but I
13 hear you.

14 MR. MECHAM: Okay. We would ask that
15 Mr. Ellis be sworn.

16 HEARING OFFICER: Mr. Ellis, this is
17 presiding officer, Michael Hammer.

18 Mr. Ellis, do you swear to tell the truth
19 today?

20 Mr. Ellis, can you hear me?

21 MR. ELLIS: Yes, I can hear you.

22 MR. HAMMER: This is Michael Hammer, the
23 presiding officer.

24 *

25 *

1 JAMES ELLIS,
2 called as a witness, having been duly sworn,
3 was examined and testified as follows:
4

5 HEARING OFFICER: Thank you.

6 MR. MECHAM: Thank you.
7

8 DIRECT EXAMINATION

9 BY MR. MECHAM:

10 Q. Mr. Ellis, would you please state your
11 name and business address for the record, please.

12 A. James Ellis. I reside at 6215 Robin Hill
13 Road; Nashville, Tennessee.

14 Q. Thank you. And what is your position at
15 ChargePoint?

16 A. I'm director of utility solutions at
17 ChargePoint.

18 Q. And did you cause to be filed direct
19 testimony consisting of 12 pages on April 6th of this
20 year, and surrebuttal testimony consisting of three
21 pages dated May 16th of this year?

22 A. Yes, I did.

23 Q. And if I were to ask you the questions
24 that are in those -- in those exhibits, would they be
25 the same today?

1 A. Yes, they are.

2 Q. Thank you.

3 And does ChargePoint support the
4 stipulation?

5 A. ChargePoint supports the stipulation.

6 Q. Thank you.

7 Mr. Hammer, I would move the admission of
8 the two pieces of evidence which I marked as
9 ChargePoint Exhibit 1 and ChargePoint Exhibit 1SR.

10 HEARING OFFICER: They're admitted.

11 MR. MECHAM: Thank you. Thank you.

12 And if there are no questions for
13 Mr. Ellis, I would ask that he be excused.

14 HEARING OFFICER: Does any party have any
15 questions for Mr. Ellis?

16 MR. SNARR: The Office has no questions.

17 MR. JETTER: No questions.

18 HEARING OFFICER: Thank you, Mr. Ellis.
19 You're excused.

20 MR. SNARR: The office would ask --

21 THE WITNESS: Thank you.

22 MR. SNARR: Excuse me.

23 HEARING OFFICER: Do you want Mr. Ellis to
24 stay on the line?

25 MR. SNARR: No.

1 HEARING OFFICER: Okay.

2 MR. SNARR: Pardon me.

3 HEARING OFFICER: Go ahead.

4 MR. SNARR: We have asked for the
5 submission of Mr. Jacob Thomas's evidence.

6 We didn't ask whether anyone wanted to
7 cross-examine him, but we offer that as well.

8 HEARING OFFICER: Okay. Thank you.

9 Does any party have any questions for the
10 witness?

11 We'll proceed with Ms. Hayes, then.

12 MS. HAYES: Thank you. Utah Clean Energy
13 will call Mr. Kevin Emerson to the witness stand.

14

15 KEVIN EMERSON,
16 called as a witness, having been duly sworn,
17 was examined and testified as follows:

18

19 HEARING OFFICER: Thank you.

20

21 DIRECT EXAMINATION

22 BY MS. HAYES:

23 Q. Good morning, Mr. Emerson.

24 Will you please state your name and
25 position for the record?

1 A. Yes. My name is Kevin Emerson. I am the
2 energy efficiency program director for Utah Clean
3 Energy.

4 **Q. Thank you. Will you please speak somewhat**
5 **more slowly?**

6 A. I'm glad to.

7 **Q. Thank you.**

8 **Did you file direct testimony in this**
9 **docket on April 6th?**

10 A. Yes, I submitted direct testimony related
11 to the Electric Vehicle Infrastructure Incentive on
12 behalf of Utah Clean Energy, and the Southwest
13 Efficiency Project as part of this docket.

14 **Q. And did you also participate in the**
15 **settlement discussions that led to the settlement**
16 **stipulation we are discussing this morning?**

17 A. Yes, I did.

18 **Q. Do you have a statement you have prepared**
19 **regarding that stipulation?**

20 A. Yes, I do.

21 Utah Clean Energy supports the settlement
22 filed as part of Mr. Meredith's testimony on May 15th.

23 Our main concern with regard to the
24 Company's proposed electric-vehicle incentives was
25 providing robust incentives for smart, at-home vehicle

1 charging.

2 Analysis from Idaho National Laboratory
3 shows that over 80 percent of charging is done at
4 home. Charging during off-peak hours, which will
5 largely take place at home and during the night, will
6 have the least impact on the utility system.

7 Therefore Utah Clean Energy feels strongly
8 that it is in the best interest of the system, and
9 also in the interest of fairness for residential
10 customers, that incentives for at-home Level 2
11 charging infrastructure be thoroughly evaluated and
12 included in future years.

13 Ratepayers that live in apartments and
14 condominiums should have the opportunity to charge at
15 home, and Utah Clean Energy believes that given the
16 increased complexity of installing electric vehicle
17 charging infrastructure in a multi-family setting,
18 that a higher incentive than one proposed is likely
19 needed for multi-family properties.

20 To address our concerns regarding Level 2
21 residential and multi-family charging infrastructure,
22 the settlement includes a few things: increased,
23 up-to, or maximum incentives in non-residential, and
24 DC fast-charging electric-vehicle infrastructure
25 includes more explicit language indicating that

1 multi-family properties are eligible for incentives
2 through the non-residential DC fast charger and
3 grant-based custom project categories; it includes the
4 commitment from the Company to provide a status update
5 on program activity in the first quarter of 2018; and
6 it includes a commitment from the Company to meet with
7 interested parties after the first year of program
8 operation to evaluate adding Level 2 incentives for
9 at-home charging, and to evaluate increasing
10 incentives for multi-family charging infrastructure.

11 **Q. Does that conclude your statement?**

12 A. Yes.

13 **Q. Thank you.**

14 **Utah Clean Energy at this time would move**
15 **the admission of the direct testimony of Kevin Emerson**
16 **marked as Utah Clean Energy Exhibit 4.0 and would make**
17 **Mr. Emerson available for questions.**

18 HEARING OFFICER: It's admitted, and does
19 any party have any questions for Mr. Emerson at this
20 time?

21 Okay. Thank you, Mr. Emerson.

22 Anything else at this time, Ms. Hayes?

23 MS. HAYES: Not at this time. Thank you.

24 HEARING OFFICER: Thank you.

25 Ms. Gardner.

1 MS. GARDNER: Thank you.
2 Western Resource Advocates calls
3 Kenneth L. Witness (sic) -- Kenneth L. Witness? --
4 Kenneth L. Wilson as our witness, and would ask that
5 he be sworn in at this time.

6
7 KENNETH L. WILSON,
8 called as a witness, having been duly sworn,
9 was examined and testified as follows:

10
11 HEARING OFFICER: Thank you.

12
13 DIRECT EXAMINATION

14 BY MS. GARDNER:

15 Q. Mr. Wilson, can you please state your name
16 and business address for the record.

17 A. Kenneth L. Wilson. Business address for
18 Western Resource Advocates is 2260 Baseline Road,
19 Suite 200; Boulder, Colorado 80302.

20 Q. And Mr. Wilson, can you please state your
21 position with Western Resource Advocates.

22 A. Yes. I'm the engineering fellow.

23 Q. Did you file a copy of your CV in Phase I
24 of this docket on November 9th, 2016 marked as WRA
25 Exhibit 1.1?

1 A. Yes, I did.

2 Q. And did you file direct testimony in
3 Phase III of this docket on April 6th, 2017, marked as
4 WRA Exhibit 2.0?

5 A. Yes.

6 Q. Did you file rebuttal testimony, also on
7 Phase III, on April 27th, 2017, marked as WRA
8 Exhibit 3.0?

9 A. Yes.

10 Q. And did you file surrebuttal testimony in
11 this docket on May 16th, 2017 marked as WRA
12 Exhibit 4.0?

13 A. Yes, I did.

14 Q. And finally, did you also file an
15 Exhibit A to Exhibit 4.0 on May 16th, 2017 entitled,
16 "A Review of Alternative Rate Designs," authored by
17 the Rocky Mountain Institute?

18 A. Yes.

19 Q. And to the best of your knowledge,
20 Mr. Wilson, is everything in your testimony true and
21 correct?

22 A. It is. However, there's some
23 clarification regarding a section of my surrebuttal
24 that I would like to make when I testify to the rate
25 structures, so I can do that a bit later.

1 Q. Okay. And Mr. Wilson, was WRA a signatory
2 to the settlement agreement filed with the Commission
3 by Rocky Mountain Power on behalf of the settling
4 parties on May 16th, 2017?

5 A. Yes, we were.

6 The parties discussed numerous issues.
7 WRA had two main issues that were addressed in the
8 settlement. One was extending the length of the pilot
9 in the way that Rocky Mountain Power discussed; and
10 the second was to focus on Level 2 chargers. And so
11 both of those issues were taken care of in the
12 settlement and we are very comfortable signing it.

13 Q. And Mr. Wilson, just one follow up there.

14 Do you believe that to the best of your
15 knowledge that the settlement agreement is just,
16 reasonable, and in the public interest?

17 A. Yes, I do.

18 Q. Thank you.

19 So at this time WRA would move for the
20 admission of all of Mr. Wilson's testimony, his CV, as
21 well as Exhibit A.

22 HEARING OFFICER: They're admitted.

23 MS. GARDNER: Thank you.

24 Mr. Wilson is available for questions.

25 HEARING OFFICER: Does any party have any

1 questions for Mr. Wilson?

2 Ms. Gardner, anything else?

3 MS. GARDNER: No, that's all. Thank you.

4 HEARING OFFICER: Thank you.

5 Anything else from any party before we
6 proceed to discussing the remaining issues -- or I
7 should say, receiving testimony on the remaining
8 issues?

9 MR. SOLANDER: If I didn't move so before,
10 I'd move that the stipulation and partial settlement
11 agreement of Phase III issues be entered into the
12 record.

13 HEARING OFFICER: They're entered. Thank
14 you.

15 All right. Then we'll proceed.

16 Mr. Solander, please call your first
17 witness.

18 MR. SOLANDER: Thank you. The Company
19 calls Mr. Robert Meredith in support of the Company's
20 proposed time-of-use programs.

21

22 ROBERT M. MEREDITH,
23 called as a witness, having been duly sworn,
24 was examined and testified as follows:

25

*

1 HEARING OFFICER: Thank you.

2 MR. SOLANDER: Good morning, Mr. Meredith.

3 MR. MEREDITH: Morning.

4

5 DIRECT EXAMINATION

6 BY MR. SOLANDER:

7 Q. Would you please state and spell your name
8 for the record.

9 A. Robert M. Meredith. R-o-b-e-r-t, M.,
10 M-e-r-e-d-i-t-h.

11 Q. And what is your current position with
12 PacifiCorp?

13 A. Manager of pricing and cost of service.

14 Q. And is this your first time testifying in
15 front of the Utah Public Service Commission?

16 A. It is.

17 Q. Could you just give the Commission a brief
18 summary of your background and how you came to your
19 current position?

20 A. Sure. I've been working with the Company
21 for about 12 years in the customer service regulation
22 and integrated resource planning departments in
23 various roles of increasing responsibility.

24 In March of 2016 I assumed my present
25 position, and in this role I'm responsible for

1 overseeing the analysis and the work that's entailed
2 with supporting the prices and the cost of service
3 analysis for all six states that PacifiCorp serves.

4 Q. And as part of those duties, did you cause
5 to be filed direct, rebuttal, and surrebuttal
6 testimony in Phase III of this proceeding?

7 A. I did.

8 Q. And do you have any corrections or
9 additions to any of those pieces of testimony that
10 you'd like to make at this time?

11 A. I do not.

12 Q. Have you prepared a statement -- a summary
13 statement in support of the Company's position with
14 respect to time-of-use rates?

15 A. Yes, I have.

16 Q. Please proceed.

17 A. Good morning. I'd first like to say that
18 I appreciate the time, effort, and thoughtfulness the
19 various parties have put into this effort to develop
20 an electric vehicle time-of-use pilot.

21 Prior to our Phase III filing, five
22 workshops were held to discuss the pilot. There have
23 been two rounds of testimony and several settlement
24 discussions that have culminated in the stipulation
25 and partial settlement agreement of Phase III issues.

1 I think that this partial settlement is
2 just, reasonable, in the public interest, and moves
3 forward many of the issues for the pilot.

4 This partial settlement resolved all
5 issues pertaining to the electric-vehicle time-of-use
6 pilot, except for the rates and the time-of-use
7 periods.

8 From my review of other parties'
9 surrebuttal testimony, other parties have also
10 expressed their support for the time-of-use periods
11 that the Company proposed. The only remaining issue
12 in dispute among the parties, therefore, is the rates
13 themselves.

14 Western Resource Advocates supports the
15 two rate designs that the Company proposes. This
16 includes two clean time-of-use options, one with a
17 moderate differential in on- to off-peak prices that
18 is about seven cents a kilowatt hour off peak, and 22
19 cents a kilowatt hour on peak; and another with a more
20 pronounced differential that is about three cents per
21 kilowatt hour off peak, and 34 cents per kilowatt hour
22 on peak.

23 The Company's proposed rates are easy to
24 understand, would produce results that would provide
25 meaningful information, and would encourage PEB

1 charging outside of the times when the Company's peaks
2 occur.

3 The two rate options proposed by the
4 Company are different enough that strong inferences
5 could be drawn for several variables, and useful
6 information could be gleaned from both the load
7 research study as well as for customers who opt into
8 one of the rates, apart from the load research study.

9 The Division, the Office, and Utah Clean
10 Energy have coalesced around two options: one that is
11 the same as the Company's Rate Option 1, and another
12 that is otherwise the same, but has inverted tier
13 blocks such that additional monthly energy consumption
14 is charged at a higher rate.

15 Testing a tiered option compared to a
16 non-tiered option, specifically for the purposes of an
17 electric-vehicle time-of-use pilot, doesn't make a
18 whole lot of sense to me. The tiered-rate option that
19 the Office, the Division, and Utah Clean Energy
20 proposed is not very different from Rate Option 1.

21 I'm not sure what we would learn, if
22 anything, from testing out these two different rate
23 options against one other.

24 While energy charge tiers are being
25 extolled by the other parties as a tool to encourage

1 overall energy reductions, I don't really think that
2 we would be able to parse out the impact that tiers
3 would specifically have on energy reductions from
4 their proposal in this pilot.

5 Time-of-use participants for this pilot
6 would be individuals who perhaps very recently have
7 adopted electric vehicles, and could have a lot of
8 usage associated with that electric-vehicle charging.
9 I do not know how reliable any estimates of energy
10 efficiency could actually be for this population of
11 customers.

12 Furthermore, tiered rates may encourage
13 energy efficiency, but they discourage
14 electric-vehicle adoption. You cannot both discourage
15 energy usage and encourage additional load from
16 electric vehicles; the two goals are diametrically
17 opposed to one another. Tiered rates may encourage
18 energy efficiency, but they do so to the detriment of
19 electric-vehicle adoption.

20 Finally, tiers send a blunt price signal
21 for customers to reduce overall energy usage. On the
22 other hand, time-of-use prices send a better, more
23 detailed, cost-informed, price signal for customers to
24 use energy at the right times. And it's more
25 important for customers to use energy at the right

1 times than it is for them to use less overall.

2 Concluding an option with tiers distracts
3 the Company's final analysis for this pilot and also
4 distracts customers from the more critical finding
5 that we're seeking in this pilot, which is: What is
6 the pricing incentive, or the bill savings, that will
7 entice customers to use less during on-peak times?

8 For all these reasons I recommend that the
9 Commission approve the Company's proposed rate options
10 for the electric-vehicle time-of-use pilot. Thank
11 you.

12 MR. SOLANDER: Thank you. Mr. Meredith is
13 available for cross-examination by the parties or
14 questions from the Commission.

15 HEARING OFFICER: Mr. Jetter.

16 MR. JETTER: No questions from the
17 Division. Thank you.

18 HEARING OFFICER: Miss Murray?

19 I'm sorry. Mr. Snarr.

20 MR. SNARR: Thank you.

21 HEARING OFFICER: I demoted you,
22 Mr. Snarr. I'm sorry.

23 MR. SNARR: I'm demoted now, but if I
24 don't get it right, Ms. Murray can follow up. Thank
25 you.

1 I have some questions.

2

3

CROSS-EXAMINATION

4 BY MR. SNARR:

5 Q. Directing your attention to your
6 surrebuttal testimony at Lines 29 through 37, you
7 identified the issues you understand to still be in
8 dispute that the Commission should address at this
9 hearing, and you've talked about some of the issues
10 here in your summary.

11 Would you agree with me that the bullet
12 points you set forth at Lines 34 through 37 of your
13 testimony are no longer in dispute?

14 A. Yes, I would.

15 Q. Okay.

16 With respect to the issues that do remain
17 in dispute, isn't it true that they are competing
18 proposals on how to design two TOU rates: one where
19 Rocky Mountain proposes to design two different rates,
20 one that was a 3:1 rate differential, and one with a
21 larger rate differential; and a counter-proposal
22 supported by other parties where one rate would
23 include a modest rate differential and the other TOU
24 rate would be based off the same rate differential but
25 would feature tiered or inclining block rates?

1 A. That's correct. That's my understanding.

2 Q. Let's now address the issues that relate
3 to the tiered or inclining block rates. At Lines 105
4 through 107 of your surrebuttal testimony, you state,
5 "While tiers have generally been
6 instituted to encourage efficiency,
7 for policy reasons they can be a
8 barrier for customers seeking to buy
9 or lease a PEV"; is that correct?

10 A. Yes.

11 Q. Have you conducted any studies to know if
12 that statement is true?

13 A. I have not conducted any specific studies
14 to know whether that statement is true, but I believe
15 that customers do respond to price signals, and having
16 a higher energy rate will, all things equal, for some
17 customers, be a barrier.

18 Q. Do you have any ideas as to how many
19 electric-vehicle owners there are in the state of Utah
20 service territory?

21 A. I don't know exactly right now. My
22 understanding is that it's somewhere between 2000 and
23 2500.

24 Q. Okay. Isn't it true that most of those
25 customers have some type of charger situated at their

1 home to charge their electric vehicle?

2 A. That's correct.

3 Q. And isn't it true that those customers
4 utilizing a home charger would receive electricity
5 through the Rocky Mountain Power residential rate
6 that's currently in place?

7 A. That's my understanding, yes, they would.

8 Q. And isn't it also true that the rates that
9 apply to those residential customers are designed with
10 tiers or inclining block rates to encourage
11 conservation?

12 A. They are.

13 Q. And to discourage the extent of use of
14 electricity?

15 A. That's the policy objectives that tiered
16 rates have right now, yes.

17 Q. So these 2000 to 2500 consumers in Utah
18 have somehow found their way to buying an electric
19 vehicle thus far; isn't that right?

20 A. They have, but I would note that 2000 to
21 2500 is not a very large number of our customers who
22 have electric vehicles right now, so --

23 Q. As you understand the proposed pilot rate
24 study, will the study focus on the habits or
25 inclinations of consumers who might be considering the

1 purchase or lease of an electric vehicle?

2 A. Our study will specifically look for --
3 the load research study we'll specifically examine
4 customers who have an electric vehicle already.
5 However, we will always, through surveys, understand
6 whether any customers -- whether the time-of-use rates
7 or the presence of those time-of-use rates was
8 something that helped entice those customers to make
9 that decision, because it is going to be available for
10 up to 1000 customers to specifically opt in to one of
11 the two rate options.

12 And so I think that some customers will
13 specifically see that and realize that there may be
14 cheaper rates available to them if they can charge
15 their electric vehicle during the off-peak period, and
16 knowing that -- and looking at what their savings
17 might be -- that may push them over the edge into
18 making that decision to either purchase or lease an
19 electric vehicle.

20 **Q. Now, does -- your study program has a**
21 **process whereby you're going to attempt to identify**
22 **those people who would participate in the program with**
23 **an electric vehicle; is that correct?**

24 A. Can you -- so you're saying we'll identify
25 those people who have an electric vehicle presently?

1 **Q. Yes.**

2 A. Yes. And that is what we will
3 specifically use to target our load research study,
4 where we'll be specifically focused on the behaviors
5 of customers who are on one of the two time-of-use
6 options; or a control group who are subject to the
7 standard rates that they are right now, and then
8 seeing what naturally would occur with their charging
9 behavior.

10 **Q. So the primary focus of the study is to**
11 **examine the charging behavior, whether they're on the**
12 **standard residential rate, whether they were on one of**
13 **the two time-of-use rates; is that right?**

14 A. I think that's one of the main things that
15 we're going to be looking at, but I think that also
16 the pilot as it's currently structured has two
17 components: one component which is a load research
18 study specifically, which has higher incentive levels
19 to entice existing electric vehicle customers to be on
20 that study right away, and to be on one of the two
21 rate options, or to not be able to be on one of the
22 two rate options and be on a control group.

23 And then that's going to have another
24 segment which is going to be customers who decide to
25 choose one of these two time-of-use options; and those

1 customers may be existing electric vehicle customers
2 or may be prospective ones who -- specifically those
3 time-of-use rates played a role in their decision to
4 adopt an electric vehicle.

5 Q. Has Rocky Mountain considered offering the
6 time-of-use rates to customers that don't have
7 electric vehicles?

8 A. We do offer a time-of-use option for
9 customers who don't have electric vehicles. Our
10 Schedule 2 is an option that customers who don't have
11 electric vehicles may choose.

12 Q. All right.

13 In the study you're proposing, you will be
14 comparing the three different groups as part of your
15 pilot study; is that correct?

16 A. It's part of the load research study, yes:
17 a control group, and Rate Option 1, and Rate Option 2.

18 Q. So necessarily there's going to be some
19 comparison made between customers who might be on a
20 rate that would include some tiered or inclining
21 blocks --

22 A. Yes.

23 Q. -- as well as those that are not?

24 A. Yes.

25 Q. And to include one more rate, a

1 time-of-use rate that would have a tiered or a block
2 feature would not complicate the study much, because
3 you're already dealing with a tiered rate in a
4 residential program, aren't you?

5 A. I think my primary contention with having
6 a tiered rate versus a rate that is not tiered is
7 that, first, as I mentioned in my summary statement
8 there is not a whole lot of difference between the
9 tiers that are being proposed.

10 And I think that specifically we're
11 wanting to look at two differentials that are fairly
12 far apart from one another, in terms of the price
13 signals that customers would see, and I believe that
14 that will provide more useful information in terms of
15 understanding charging behavior and other variables
16 that I think are useful, such as what role this may
17 play in electric-vehicle adoption.

18 Q. Have you reviewed the testimony -- the
19 surrebuttal testimony of -- of Utah Clean Energy's
20 Sarah Wright?

21 A. Yes, I have.

22 Q. And isn't it true that the Utah Clean
23 Energy's rate proposal involving tiers, ,that Tier 2
24 would not become applicable until after levels
25 contemplated for average residential usage and

1 anticipated normal electric vehicle charging usage
2 would fully accommodate?

3 A. For the average customer, the way that my
4 understanding is: She has designed this such that a
5 typical customer who uses about 700 kilowatt hours per
6 month and then has additional load of about 300
7 kilowatt hours a month, which would encompass -- I
8 think what I've said may be sort of a typical energy
9 level of charging for a thousand miles a month. That
10 would all add up to 1000 kilowatt hours.

11 However, if a customer had all 1000 of
12 those kilowatt hours during the off-peak period, those
13 customers would be subject to the tiered rates.

14 I would also note that many customers are
15 not the average. There will be many who are below
16 that average and many who are above that average. And
17 so for those customers who are above the average,
18 those tiers potentially are a little bit more of a
19 barrier for that customer, a little bit longer of a
20 payback period for that customer, in terms of their
21 decision to adopt an electric vehicle.

22 Q. In your summary just presented earlier
23 today, you said that

24 "The usage for electric vehicles
25 should be encouraged and is

1 **diametrically opposed to the policies**
2 **we have with reference to energy**
3 **conservation," or words to that**
4 **effect.**

5 A. I think what I said was that specifically
6 with this pilot which is -- we are making this ap --
7 we've made this application for this pilot and we're
8 looking to have this electric-vehicle pilot to
9 specifically respond to the provision in the STEP Act,
10 which looks to encourage electric-vehicle charging
11 during the off-peak period. And so I think that for
12 that, the goals of specifically encouraging energy
13 efficiency and discouraging electric-vehicle adoption
14 are diametrically opposed to one another.

15 So I would say that for our existing
16 rates, yes, right now they may encourage energy
17 efficiency, but they do also discourage
18 electric-vehicle adoption.

19 **Q. So with respect to the current rates,**
20 **would I contemplate a proposal from Rocky Mountain:**
21 **We just take off the existing tiers for residential**
22 **rates, if you happen to have an electric vehicle?**

23 A. That's not specifically what the Company
24 is proposing right now.

25 What we are looking at is a time-of-use

1 options (sic) where customers who opt to be in to a
2 time-of-use rate -- where those customers now have the
3 opportunity for much higher bills if their energy
4 occurs more during the on-peak period -- would no
5 longer be subject to the tiers, because they are now
6 subject to a more cost-based, more-detailed pricing,
7 which includes time-of-use prices.

8 **Q. I guess the real question is: Can**
9 **time-of-use pricing co-exist in a world where we're**
10 **also trying to encourage energy conservation?**

11 A. They can co-exist, but I think they
12 undermine some of the goals that are trying to be
13 achieved here, specifically encouraging electric
14 vehicle charging during the off-peak period.

15 MR. SNARR: I have no further questions.

16 HEARING OFFICER: Thank you.

17 Mr. Mecham?

18 MR. MECHAM: I have no questions, thank
19 you.

20 HEARING OFFICER: Ms. Hayes?

21 MS. HAYES: Good morning, Mr. Meredith.

22 MR. MEREDITH: Good morning.

23 *

24 *

25 *

1 CROSS-EXAMINATION

2 BY MS. HAYES:

3 Q. If I could direct you to your surrebuttal
4 testimony, at Line 100, you say,

5 "In this pilot, tiers would distract
6 from the primary message for
7 customers to manage their hourly
8 energy consumption with time of
9 use" --

10 I'm so sorry -- pardon me.

11 I'm reading from Mr. Meredith's testimony
12 at Line 100 in his surrebuttal.

13 "In this pilot, tiers would distract
14 from the primary message for
15 customers to manage their hourly
16 energy consumption with time of use."
17 That's what it says; is that correct?

18 A. Yes.

19 Q. This is -- this is your opinion, correct?

20 A. It is my opinion.

21 Q. You don't -- this isn't based on a study
22 you've actually conducted already, is it?

23 A. No.

24 Q. All right. And -- and -- or -- or that
25 others have conducted; studies that others have

1 conducted, correct?

2 A. That's correct.

3 Q. All right. In your statement just now,
4 you said that tiered time-of-use rates would
5 discourage electric-vehicle adoption; is that correct?

6 A. Yes.

7 Q. It's true, though, isn't it, that one of
8 Utah Clean Energy's explicit objectives in this docket
9 is to encourage electric-vehicle adoption, isn't it?

10 A. Yes.

11 Q. And that that was one of our primary
12 objectives in designing the tiered time-of-use rate
13 that we did?

14 A. Yes.

15 Q. All right. Have you reviewed Utah Clean
16 Energy's tiered time-of-use Rate Option 2?

17 A. Yes, I have.

18 Q. And if you want a visual, it's Sarah
19 Wright's surrebuttal, Page 45.

20 And in your surrebuttal you did some
21 analysis regarding the cost of charging and the simple
22 payback of an electric vehicle --

23 A. Uh-huh.

24 Q. -- at different time-of-use prices. And
25 I'd like to -- to sort of explore those with you. But

1 looking at this comparison of Rocky Mountain Power's
2 Rate Option 1 and Utah Clean Energy's Rate Option 2,
3 it's true, isn't it, that the on-peak Tier 2 price of
4 Utah Clean Energy's Option 2 is exactly the same as
5 the on-peak tier in Rocky Mountain Power's Rate
6 Option 1; is that correct?

7 A. And you're referring to the 2.2755 cents
8 is --

9 Q. Yes.

10 A. -- the same between the greater than 200
11 kilowatt hours consumption in Utah Clean Energy's Rate
12 Option 2 versus the Company's proposed Rate
13 Option 1 --

14 Q. Yes.

15 A. -- for on peak?
16 Yes, they're the same.

17 Q. All right. And with regard to the
18 off-peak prices, Utah Clean Energy's off-peak prices
19 be in the first tier in Utah Clean Energy's option,
20 the Utah Clean Energy's first tier is 6.1 cents, which
21 is a little less than one cent below Rocky Mountain
22 Power's 6.8 cents --

23 A. Um-hm.

24 Q. -- while our Tier 2 price is less than one
25 cent above --

1 A. Uh-huh.

2 Q. -- Rocky Mountain Power's price.

3 And so going to your -- your -- I'm sorry,
4 what exhibit is it? -- RMM -- TSR --

5 A. It's TSR, yes.

6 Q. Yes. I don't want to ask you to do any
7 complicated math, but if it takes 347 kilowatt hours a
8 month to charge an electric vehicle, and it's less
9 than one cent more per kilowatt hour to charge
10 entirely in the second tier under Utah Clean Energy's
11 option, that's around four dollars more a month,
12 right?

13 A. I haven't done the math but I would say
14 that relative to what Utah Clean Energy was looking at
15 in the rebuttal testimony where the differential was
16 two-and-a-half cents per kilowatt hour, now moving
17 forward to the surrebuttal testimony which has a
18 differential during the off-peak period of about
19 1.6 cents a kilowatt hour, I would say that the
20 1.6 cents a kilowatt hour is better in terms of not
21 discouraging electric-vehicle adoption as much.

22 I would also say, though, that looking at
23 specifically the difference in the surrebuttal rates,
24 these rates are less discouraging to electric-vehicle
25 adoptions, but also say that they are so similar to

1 Rate Option 1 that it's going to be very challenging
2 to understand very much from these rates.

3 And I don't think they're very different
4 from one another to where we could really draw any
5 strong inferences from that, from the 1.6 cents for
6 this specific population.

7 **Q. But you don't know that, having not**
8 **actually undergone the load research study?**

9 A. No. But I know that looking at these
10 rates and seeing how close they are to one another,
11 and just thinking myself about in a few years from now
12 having to write a report and look at how that may have
13 influenced specifically energy reductions -- which I
14 think is what Utah Clean Energy is wanting to
15 understand -- is how tiered rates may influence
16 conservation.

17 I think it's going to be very challenging
18 to be able to tell that there's one rate option which
19 is 6.8 cents a kilowatt hour, about, and another rate
20 option that's 6.1, versus 7.7 cents a kilowatt hour
21 during the off-peak period -- whether it's below 800,
22 above 800 kilowatt hours -- I haven't done any
23 specific analysis.

24 But looking at these rates, I think it's
25 going to be very challenging to try and parse out any

1 sort of meaningful information from those.

2 Q. But you've also said that tiers will
3 distract from -- from the time-of-use price signals.
4 And so it's a little confusing which argument you're
5 trying to make.

6 I mean are the tiers going to distract
7 from the price signals or are they going to give
8 you -- give you the same results?

9 A. So I think there's -- I think maybe, if I
10 may, what you're trying to say is: Will they distract
11 the Company's analysis, or will it distract the
12 customers themselves, in terms of deciding to consume
13 more or less energy during the -- during the on- and
14 off-peak periods and respond to the price signals. Is
15 that what you're trying to understand, because --

16 Q. What I'm trying to understand is -- or
17 what -- it sounds like we don't know what -- what the
18 impact will be. It sounds like you're making a lot of
19 conclusions without any evidence.

20 A. I think looking at these specific rates
21 and how close they are, I think that it's very likely
22 it will be really hard to say that a customer has
23 really reduced their energy consumption, specifically
24 for electric-vehicle owners, because I think this is a
25 very unique population that we're dealing with.

1 I think it's going to be very challenging
2 to be able to say whether they have reduced overall
3 energy consumption or not.

4 And I think there are, you know, a couple
5 of competing goals here with the rates that you're
6 looking at. I think that on the one hand you want to
7 have results that are meaningful enough that you can
8 really see, you know, two different points and be able
9 to draw some clear inferences where the two rates are
10 enough different from one another to be able to draw
11 clear conclusions.

12 On the other hand, I can appreciate that
13 Utah Clean Energy also does not want to discourage
14 electric-vehicle adoption. I believe that that --
15 that they share that goal with the Company, and with
16 other parties in this case.

17 However, I think that these rates, as they
18 are, are so similar, that I think that they may --
19 they are not as much of a barrier as what I had
20 previously described in terms of 1.6 cents compared to
21 the two-and-a-half cents.

22 They are still somewhat of a barrier, I
23 would say, and I think they are still very close to
24 where it's going to be very hard to understand any
25 sort of impact from energy efficiency, specifically

1 for this population of customers.

2 **Q. But as you said before, we have not**
3 **actually studied this in Utah, the impact of tiered**
4 **rates with time-of-use rates, correct?**

5 A. We haven't specifically studied it but I
6 just -- a visual examination, and I think somebody who
7 looks at Table 1 from Utah Clean Energy's surrebuttal
8 will see that these rates are so close, and
9 specifically looking at this population of
10 electric-vehicle customers, it's going to be very hard
11 to tell whether there was additional energy
12 efficiency.

13 I think also what will skew the results is
14 that there's going to be a natural inclination, I
15 think, for smaller users to want to select the tiered
16 option, and then I don't know what that will actually
17 tell us about -- about these customers, even --
18 specifically for the customers who opt into it.

19 I think the load research study will also
20 be challenging to understand whether there's any
21 behavioral changes, because the rates are so close to
22 one another.

23 **Q. There is also a random assignment group,**
24 **correct?**

25 A. Yep. Yeah. Yeah. That's what I'm

1 talking about, the two different groups: one that's
2 selecting it, and one that's being randomly assigned,
3 correct.

4 MS. HAYES: No further questions.

5 HEARING OFFICER: Thank you, Ms. Hayes.

6 Ms. Gardner?

7 MS. GARDNER: We have no questions at this
8 time.

9 HEARING OFFICER: Thank you.

10 I have just a couple.

11

12 EXAMINATION

13 BY THE HEARING OFFICER:

14 Q. Mr. Meredith, leaving aside the
15 tiered-rate issue, I believe there was suggestion in
16 some of the written testimony that with respect to
17 Option 2, something in the way of a compromise of a
18 ratio of less than 10-to-1 might be an acceptable
19 solution, something maybe in the nature of 5-to-1 or
20 6-to-1 for peak to off-peak pricing.

21 Would you consider endorsing something
22 less than 10-to-1 for Option 2?

23 A. I think that having a -- something less
24 than 10-to-1 that was not tiered would be better than
25 comparing a tiered versus a not-tiered option that are

1 very close to one another.

2 My preference would be the 10-to-1, but I
3 think the 6-to-1 or a 7-to-1 would also give us useful
4 information. I think that having those points sort of
5 far apart from each other but still providing fairly
6 robust savings in both options relative to what a
7 customer can achieve with our present rates, including
8 our present time-of-use Schedule 2, I think having
9 those two points far apart from each other will allow
10 us to be able to draw lines between those and be able
11 to clearly tell between different variables what the
12 impacts may be.

13 **Q. Thank you.**

14 **The other parties can speak for themselves**
15 **but just for my clarification: I thought I heard you**
16 **say that with respect to the time period that would be**
17 **used for the peak and off-peak period, there was no**
18 **longer disagreement between the parties. Did I hear**
19 **you correctly?**

20 **A. That's my understanding from reading the**
21 **surrebuttal testimony of the different parties.**

22 **Q. Okay. Well, we'll let them speak, but I**
23 **wanted to make sure I understood you.**

24 **Finally, to the extent the Commission were**
25 **inclined to adopt something like a 10-to-1 or a larger**

1 ratio for Option 2, are there any measures that the
2 Company, or specifically you would suggest, that might
3 be taken to put customers on adequate notice that that
4 might not be an option that would survive the pilot
5 program?

6 A. Absolutely. I think we need to be very
7 straightforward with our customers and educate them
8 well that this is a pilot. These aren't necessarily
9 rates that will continue forever, or even beyond this
10 pilot period.

11 We are looking to gather information and
12 understand the impacts, and then after that point they
13 may be continued in another form or may not be
14 continued.

15 Q. Do you have any specific recommendations,
16 such as language, to the tariff? I realize that I'm
17 just dropping this on you right now, but do you think
18 that perhaps further notifications on the tariff or
19 some other process to notify customers would be
20 appropriate?

21 A. I think the tariff itself spells out that
22 it's for the pilot period and discusses when it will
23 end.

24 Let me find the tariff here -- but it
25 does -- it does say that it will end at the end of the

1 step -- step pilot period. So I think that having
2 that and specifically having that addressed in the
3 customer communications that we send to customers will
4 be important, that they realize that this is a
5 program.

6 HEARING OFFICER: All right. Thank you.

7 MR. MEREDITH: You're welcome.

8 HEARING OFFICER: Mr. Solander, any
9 redirect?

10 MR. SOLANDER: Thank you. No redirect.

11 HEARING OFFICER: Okay. Thank you,
12 Mr. Meredith.

13 Mr. Solander, do you have any other
14 witnesses?

15 MR. SOLANDER: I do not. That concludes
16 the Company's presentation.

17 HEARING OFFICER: Mr. Jetter.

18 MR. JETTER: The Division would like to
19 recall Mr. Robert A. Davis. I'm not sure if he's -- I
20 think he hasn't been excused so he's sworn in, but --

21 HEARING OFFICER: Mr. Davis, you're still
22 under oath.

23 MR. JETTER: Good morning, Mr. Davis.

24 *

25 *

1 DIRECT EXAMINATION

2 BY MR. JETTER:

3 Q. Earlier in this hearing you provided your
4 name and occupation for the record so I'm not going to
5 ask you that again, but I'd like to go through briefly
6 the testimony you filed in this docket.

7 Is it correct that you have caused to be
8 filed in this docket direct, rebuttal, and
9 surrebuttal, and because of the complexity and
10 multiple phases of this docket, I'd like to identify
11 them a little more specifically as PPO Exhibit P3
12 1.0 direct, PPO Exhibit Number P3 1.0 rebuttal, and
13 PEO Exhibit Number P3 1.0 surrebuttal.

14 A. That's correct.

15 Q. And do you have any corrections or changes
16 you'd like to make to that testimony?

17 A. I do not.

18 Q. If you were asked the same questions that
19 are asked in your prefiled testimony that I just
20 identified today, would your answers remain the same?

21 A. They would.

22 Q. Thank you.

23 I'd like to move to enter into the
24 evidence of this hearing the direct, rebuttal, and
25 surrebuttal that I've identified previously.

1 HEARING OFFICER: They're admitted.

2 MR. JETTER: Thank you.

3 Q. Have you prepared a brief statement
4 summarizing the position of the Division?

5 A. I have.

6 Q. Please go ahead.

7 A. The Division has reviewed the Company's
8 application for implementation of the electric-vehicle
9 incentive and time-of-use pricing programs as outlined
10 in the Commission's Phase III scheduling order in this
11 docket.

12 In my direct testimony I expressed the
13 Division's concerns surrounding the Company's proposed
14 time-of-use option to -- as being similar to its
15 Proposed Option 1, but only more aggressive.

16 The Division expressed its concerns about
17 the possible punitive pricing structure of the
18 Company's Proposed Option 2, based on the customer's
19 ability to shift load, other than charging their
20 electric vehicles to off-peak periods.

21 Additionally the Division had concerns
22 that the proposed price guarantee may distort usage
23 behavior. In my rebuttal testimony I expressed the
24 Division's concerns surrounding the proposed rate
25 designs and varying time periods proposed by the

1 Office of Consumer Services.

2 Similarly I expressed the Division's
3 concerns surrounding the proposal of Utah Clean
4 Energy's rate designs using tiered rates and blocking
5 around a thousand kilowatt hours along with varying
6 time periods and super off-peak pricing.

7 In surrebuttal I stated that designing
8 rates requires balancing several often-opposing or
9 objectives of principles while trying to address all
10 the parties' expectations for a program such as the
11 Electric Vehicle Incentive Program.

12 Prior to filing testimony, the parties,
13 including the Division, discussed several potential
14 rate designs and time periods for the pilot.

15 The Division has not previously offered
16 its own rate designs because its rate designs were not
17 significantly different than the other parties'.
18 However, in my surrebuttal I offered the Division's
19 support for the Company's Proposed Option 1, or one of
20 the options proposed by the Office of Consumer
21 Services for one of the pilot options.

22 For the pilot's Option 2, the Division
23 offered support for Utah Clean Energy's tiered-rate
24 proposal with a different blocking structure providing
25 the billing comparison sent a strong enough signal to

1 the customer to charge their electric vehicles off
2 peak.

3 The Division's underlying expectation for
4 the electric-vehicle pilot has been defined as two
5 rate designs that are cost based and potentially could
6 be used or adapted going forward after the pilot ends.

7 One of the key points to that is an
8 attempt to understand electric-vehicle customer
9 behavior and determine what will incent (sic) those
10 customers to charge their electric vehicles off peak,
11 and encourage them to use energy more efficiently.

12 Therefore the Division supports the
13 Company's time-of-use Option 1 with a two-part on-peak
14 off-peak pricing structure, and a 3-to-1 ratio as
15 Option 1 for the pilot.

16 The Division further supports the
17 Company's proposed time periods of 3:00 p.m. to
18 8:00 p.m. for the summer and winter months, with an
19 additional 8:00 a.m. to 10:00 a.m. window during the
20 winter months excluding weekends and holidays for both
21 proposed time-of-use rate options.

22 Since rebuttal testimony, the parties had
23 several discussions regarding a time-of-use Option 2
24 proposal that would optimally support the pilot. The
25 expectation of the time-of-use rate to incent

1 customers to charge their electric vehicles off peak
2 also needs to consider bill impacts that may occur as
3 a result of the proposed rates combined with the
4 customer's other energy-use behaviors.

5 From these discussions, in consideration
6 of the parties' expectations and Company's proposed
7 Option 2, the Division supports Utah Clean Energy's
8 revised four-part tiered-rate design, around 200
9 kilowatt on peak and 800 kilowatt off peak as an
10 overall compromise. Utah Clean Energy's design offers
11 a similar 3-to-1 on-peak off-peak pricing structure.

12 The Company's proposed Option 1, while
13 incenting customers to use energy more efficiently
14 through the design's tiered blocks.

15 In consideration the settlement between
16 the parties for all other issues, the Division
17 supports the Company's proposed time-of-use Option 1,
18 the Company's proposed time-of-use periods, and Utah
19 Clean Energy's proposed rate design for Option 2, as
20 discussed above.

21 The Division finds electric-vehicle
22 incentive and time-of-use pricing programs as outlined
23 in the Commission's Phase III scheduling order in this
24 docket to be in the public interest, and recommends
25 approval.

1 concern that the similarity between UCE's proposed
2 Option 2 rates and the Option 1 rates will undermine
3 the desired outcome of the pilot period; in other
4 words, what the Company hopes to learn from conducting
5 the study?

6 A. I think Mr. Meredith has valid points. I
7 think in -- to compromise. There's also some benefits
8 in studying the tiered rates.

9 The Division felt, as I mentioned in my
10 direct testimony, that the 10-to-1 option was a little
11 bit punitive, and in the case the customers could not
12 shift some of their other load to off-peak, in
13 consideration of the price guarantee, my understanding
14 is is that is after the year's study. So during the
15 month there's going to be possibly high bills that
16 would take place.

17 So that was part of our consideration in
18 supporting Utah Clean Energy's option.

19 **Q. Thank you.**

20 And with respect to any proposal to --
21 setting aside again the tiered-rate structure -- with
22 respect to Option 2 -- with respect to any proposal to
23 adopt something less aggressive than a 10-to-1 ratio,
24 something between 5-to-1 to 7-to-1 -- would the
25 Division find that more acceptable than a 10-to-1

1 ratio?

2 A. Yes.

3 HEARING OFFICER: I don't have anything
4 further. Thank you, Mr. Davis.

5 THE WITNESS: Thank you.

6 HEARING OFFICER: Mr. Snarr.

7 MR. SNARR: Yes. We'd be happy to call
8 Cheryl Murray as our witness.

9 HEARING OFFICER: Ms. Murray, you're still
10 under oath.

11 THE WITNESS: Thank you.

12

13 DIRECT EXAMINATION

14 BY MR. SNARR:

15 Q. You previously provided your name and
16 business address and described the testimony that was
17 submitted as part of this Phase III hearing; is that
18 correct?

19 A. Yes.

20 Q. Have you prepared a summary of your
21 testimony as it relates to the issues that are
22 remaining to be resolved in this hearing?

23 A. Yes, I have.

24 Q. Would you present that summary at this
25 time?

1 A. Yes.

2 The settlement stipulation resolved the
3 majority of the issues except for the energy prices to
4 be used in TOU Rate Option 1 and 2, as well as the
5 hours to be included in the definition of on and off
6 peak. However, in reviewing the surrebuttal testimony
7 filed by all parties, it is clear that the differences
8 have been narrowed even further.

9 For purposes of the pilot study it appears
10 that all parties now support the Company's definition
11 of on- and off-peak time periods. It also appears
12 that all parties support including the Company's TOU
13 Rate Option 1. As stated by Mr. Meredith, the only
14 remaining difference is the specific design of Rate
15 Option 2 to study in comparison to existing
16 residential Rate Schedule 1 and the Company's proposed
17 TOU Rate Option 1.

18 As stated in our surrebuttal testimony,
19 the Office recommends that the Commission order a TOU
20 pilot that uses the Company's definition of on- and
21 off-peak periods, the Company's proposal for Rate
22 Option 1, and a TOU Rate Option 2 with tiers for both
23 on-peak and off-peak rates.

24 The Office believes the following
25 principles comprise the primary objectives for the

1 Rate Option 2 design: maintain approximately the same
2 differential between on- and off-peak rates for both
3 Rate Option 1 and Rate Option 2, so that the primary
4 difference between the two rate designs to be studied
5 is whether and how having tiered rates impacts changes
6 in consumption; establishing meaning of the difference
7 between Tier 1 and Tier 2 for both TOU time periods,
8 while assuring the Company's revenue requirement would
9 still be collected; design an appropriate break
10 between Tier 1 and Tier 2 to create a meaningful rate
11 design differential.

12 Tiers should be developed in the context
13 of the residential average monthly consumption of 700
14 kilowatt hours with an understanding of how the
15 additional consumption associated with electric
16 vehicle charging will impact total consumption.

17 The Office has reviewed the specific
18 proposal presented by UCE -- Utah Clean Energy -- in
19 surrebuttal testimony, and finds it meets the criteria
20 we articulated, and supports it as a reasonable design
21 for TOU Rate Option 2.

22 In our surrebuttal testimony the Office
23 recommended that the Commission order a short
24 compliance phase in this proceeding, which would
25 require the Company to submit specific rates that

1 would comply with the concept the Commission
2 determines are in the public interest.

3 If the Commission accepts Utah Clean
4 Energy's proposal, the Office continues to recommend
5 the Commission order a compliance filing by the
6 Company so that all parties have an opportunity to
7 review the proposal, and the rates and bill impacts
8 can be verified.

9 The Commission should also allow comments
10 and reply comments on such a compliance filing, so
11 that the Commission can ensure that the rates meet the
12 Commission's objectives.

13 **Q. Does that conclude your summary?**

14 **A. It does.**

15 MR. SNARR: We would tender Ms. Murray for
16 cross-examination.

17 HEARING OFFICER: Mr. Solander?

18 MR. SOLANDER: Nothing.

19 HEARING OFFICER: Mr. Jetter?

20 MR. JETTER: No questions.

21 HEARING OFFICER: Mr. Mecham?

22 MR. MECHAM: Nothing, thank you.

23 HEARING OFFICER: Ms. Hayes.

24 MS. HAYES: No questions. Thank you.

25 HEARING OFFICER: Ms. Gardner.

1 MS. GARDNER: No questions.

2

3

EXAMINATION

4 BY THE HEARING OFFICER:

5 Q. Ms. Murray, just so I'm clear:

6 Essentially, then, you concur with the Division in all
7 of the recommendations as to what the Commission
8 should do with respect to the proposal, right?

9 A. Regard- -- regarding the rates, yes.

10 Q. Regarding the rates.

11 So specifically -- on board with the
12 Company's proposed on- and off-peak time periods,
13 support the Company's Option 1, and support UCE's
14 proposal with respect to Option 2?

15 A. That's correct.

16 Q. Okay. And do you have anything you would
17 like to add with respect to Mr. Meredith's concern
18 that having the Option 2 rates be so similar to the
19 Option 1 rates, will undermine the efficacy of the
20 study?

21 A. Well, we think it is reasonable to have
22 those two options available. I would note in -- and I
23 know Mr. Meredith has said that he's not sure that we
24 will be able to observe what effect it has on
25 conservation -- but in the Rocky Mountain Institute

1 report, it does comment that there isn't much study on
2 how conservation is affected by time-of-use rates.

3 And so we think that tiers within it would
4 have -- give us an opportunity to look at those
5 things, and we also believe that a compliance filing
6 at some point will be -- we can be -- can be used to
7 tweak rates, if we feel that that's necessary.

8 **Q. And Mr. Davis expects -- expressed some**
9 **concern that customers who elect Option 2 under the**
10 **Company's proposal might experience some sticker shock**
11 **when their bill arrives, that won't be remedied until**
12 **the end of the year. Does the Office care to comment**
13 **with respect to that observation?**

14 **A. Well -- (Pause)**

15 HEARING OFFICER: Ready? Go ahead,
16 Ms. Murray.

17 MS. MURRAY: I guess I would have two
18 observations regarding that. First, in the
19 available-to-select group -- so people who are
20 self-selecting an option -- they do have one
21 opportunity during the year to -- under the Company's
22 proposal if it were accepted, they have an opportunity
23 one time to move to a different rate; and under the
24 randomly-assigned group where the load research
25 study -- there is the 110 percent guarantee, so they

1 are -- over the course of a year, their total rate
2 would not be higher than 10 percent of what it would
3 be under Residential Schedule 1. However, month by
4 month they would see that sticker shock.

5 HEARING OFFICER: All right. I have
6 nothing else. Thank you, Ms. Murray.

7 Mr. Mecham, do you have testimony to
8 present during this -- this phase of the Phase III
9 hearing?

10 MR. MECHAM: I do not. Thank you.

11 HEARING OFFICER: Thank you.

12 Ms. Hayes.

13 MS. HAYES: Thank you. Utah Clean Energy
14 will call Ms. Wright, but I'm wondering if we could
15 take a five-minute recess so I could refill my water,
16 and --

17 HEARING OFFICER: Two things: Mr. Snarr,
18 I didn't ask if you had another witness -- I assumed
19 you didn't, but if you do I should allow you the
20 opportunity to call him or her.

21 MR. SNARR: We have no other witnesses
22 other than the ones we've identified, and with respect
23 to Mr. Thomas, who only addressed the stipulation, I
24 think we've excused him, and we have nothing more.

25 HEARING OFFICER: Okay. Thank you. Does

1 anyone object to having a five-minute break?

2 Okay. We'll be in recess until 10:30.

3 Thanks.

4 (There was a break taken.)

5 HEARING OFFICER: We're back on the
6 record. Ms. Hayes.

7 MS. HAYES: Thank you, Mr. Hammer.

8 Utah Clean Energy will now call Ms. Sarah
9 Wright. And she will need to be sworn.

10

11

SARAH WRIGHT,

12

called as a witness, having been duly sworn,

13

was examined and testified as follows:

14

15

HEARING OFFICER: Thank you.

16

17

EXAMINATION

18 BY MS. HAYES:

19

Q. Ms. Wright, please state your name and

20 title for the record.

21

A. My name is Sarah Wright. I'm the

22 executive director of Utah Clean Energy.

23

Q. In Phase III of this docket, did you file

24 direct testimony along with one exhibit on April 6th,

25 2017?

1 A. Yes, I did.

2 Q. And did you file rebuttal testimony on
3 April 27th, 2017?

4 A. Yes.

5 Q. And did you file surrebuttal testimony on
6 May 16th, 2017?

7 A. Yes, I did.

8 Q. Do you have any corrections to make to any
9 of your testimony?

10 A. Yes, I do.

11 Q. Go ahead.

12 A. The first correction that I would like to
13 make is to my rebuttal testimony. It is mislabeled as
14 "Direct Testimony" on the cover page and on the page
15 headers. These should be corrected to read
16 "Rebuttal," rather than "Direct."

17 Likewise, turning to my surrebuttal
18 testimony, my surrebuttal testimony is labeled
19 "Rebuttal Testimony" in the docket number block.

20 Finally, please turn to Page 7 of my
21 surrebuttal testimony. At Line 110, the Number 4
22 should be replaced with -- by 3.7. The sentence
23 should read,

24 "The differential between the second
25 on-peak tier and the first off-peak

1 tier is 3.7 to one."

2 Q. Do you have any other corrections to make?

3 A. No.

4 Q. So if I ask you the same questions as set
5 forth in your testimony, would your answers be the
6 same?

7 A. Yes, they would.

8 Q. Mr. Meredith provided an exhibit with his
9 surrebuttal testimony that provided a table of
10 parties' positions. Given that positions have been
11 clarified through the course of this docket, do you
12 have any edits to make to that table with regard to
13 Utah Clean Energy's positions?

14 A. Yes.

15 Q. With regard to the first issue whether one
16 of the time-of-use rates should include tiers, is
17 Mr. Meredith's summary correct?

18 A. Yes, Utah Clean Energy recommends that one
19 of the rate options should include inclining block
20 tiers.

21 Q. With regard to the second issue -- that
22 is, what should the differential be between on- and
23 off-peak energy prices, what is Utah Clean Energy's
24 position?

25 A. Utah Clean Energy recommends that the

1 Commission adopt the Company's first option, which has
2 a differential of 3 to 1, and UCE's tiered option
3 which is roughly a 3 to one differential.

4 Oh, sorry, I didn't -- between tiers. And
5 the differential between on-peak second tier and the
6 off-peak first tier is 3.7 to one.

7 **Q. And then with regard to the third issue in**
8 **Mr. Meredith's table regarding the on-peak and**
9 **off-peak time periods, what is Utah Clean Energy's**
10 **position?**

11 A. Well, we still have questions about the
12 cost basis of these time periods. For the purposes of
13 this pilot we accept the time periods proposed by the
14 Company.

15 **Q. And then with regard to the final issue in**
16 **the table regarding the super off-peak period, what is**
17 **Utah Clean Energy's position?**

18 A. Mr. Meredith is correct. Utah Clean
19 Energy has decided not to advocate for a super
20 off-peak period at this time.

21 **Q. Having provided these clarifications, do**
22 **you have a summary of your testimony to present to the**
23 **Commission?**

24 A. Yes.

25 **Q. Please proceed.**

1 A. First off I would like to thank the
2 Commission and all parties for investigating and
3 working on the time-of-use rate design pilot.

4 Utah Clean Energy strongly supports a
5 transition to electric vehicles. However, as the
6 penetrations of electric vehicles increases, it will
7 be critical to both to -- to both continue to
8 accelerate more efficient use of electricity, and
9 encourage customers to charge their vehicles during
10 off-peak times.

11 These two parameters, being as efficient
12 as possible and shifting consumption to off peak, will
13 put downward pressure on rates over the long term for
14 the benefit of all ratepayers.

15 Throughout this docket we worked with
16 parties to find as much common ground as possible, and
17 through review of parties' filed testimony, Utah Clean
18 Energy was persuaded that it would be useful in the
19 pilot to study two similar time-of-use rates, one with
20 inclining block rates and one without.

21 Because electric-vehicle adoption has the
22 potential to increase load overall, it is important to
23 consider the signals for efficiency embedded in
24 time-of-use rates.

25 Self-evaluating a tiered-rate time-of-use

1 option will help us evaluate the impact of the
2 combination of time-of-use and inclining block rates
3 on both conservation and shifting usage to off-peak
4 times relative to a non time-of-use rate option.

5 Utah Clean Energy worked in consultation
6 with the Office of Consumer Services and the Division
7 of Public Utilities to develop a tiered-rate option to
8 align closely with Rocky Mountain's Rate Option 1.

9 Using the Company's worksheets we designed
10 this rate option with the following objectives:

11 maintain approximately the same differential between
12 on and off peak, as was used in Rocky Mountain's Rate
13 Option 1; provide a meaningful differential between
14 Tier 1 and 2 to send signals to conserve; and also to
15 provide savings for EV owners, and to reduce the
16 disparity of bill impacts across residential energy
17 usage levels that exist in Rocky Mountain Power's Rate
18 Option 1 and their Rate Option 2.

19 Some parties had concerns about the
20 complexity of layering time-of-use rates and inclining
21 block rates; however, Utah ratepayers have had
22 inclining block rate pricing for over 15 years, and
23 our proposal merely layers time-of-use pricing onto
24 tiered pricing that customers are already well
25 accustomed to and familiar with.

1 Some parties had concern that a 3-to-1
2 differential between on- and off-peak pricing would
3 not be sufficient to send signals to shift load to off
4 peak.

5 It's important to note that we're not --
6 these rates are not designed to tell people not to
7 cook at a certain time during peak. These are --
8 electric vehicles are technology-enabled. That means
9 they can be programmed to charge during off-peak
10 periods.

11 If a customer knows that they'll pay three
12 to four times more to fuel their vehicle when they get
13 home from work, they will set their car to start
14 charging in the off-peak period. It's not that they
15 have to go out and tell it to do it right at that
16 time; they have to program it, and the car will just
17 do that.

18 Parties also expressed concerns that
19 tiered rates would discourage EV adoption, but my
20 analysis shows that it will still cost less than \$30
21 per month for an EV customer to charge their vehicle
22 under UCE's proposal, even charging at the second tier
23 off-peak rate, even if the charging is all done at the
24 second off-peak rate.

25 Further, if there's a desire to tweak the

1 tier such that there's a larger differential, if we
2 keep the second tier below the current first tier of
3 8.8 cents, customers will definitely save as compared
4 to their current rates.

5 Option 2 treats all usage levels of
6 customers equitably, and still provides significant
7 savings opportunities for electric-vehicle owners who
8 charge off peak. And with regard to the Company's
9 proposed Rate Option 2, we are very concerned about
10 the extreme 10-to-1 differential or even a 5- to
11 6-to-1 differential between the off- and on-peak
12 prices.

13 Because of the price signals that this
14 very low rate during all off peak hours of the day
15 including weekends, during all off-peak hours of the
16 day, including weekends and holidays, electricity
17 would be billed at an extremely low rate. In the case
18 of the 10-to-1 differential, it would be 3.4 cents.

19 These off-peak hours constitute 85 percent
20 of the summer hours, and 80 percent of the winter
21 hours. This extremely cheap electricity could lead to
22 inefficient and wasteful use of electricity, but in
23 the long run could lead to costly system investments
24 and rate increases that could have been avoided.

25 In summary, Utah Clean Energy recommends

1 that the Commission reject the Company's Rate
2 Option 2, and replace it with Utah Clean Energy's
3 tiered Rate Option 2, as the two time-of-use rate
4 options to implement and study during this time-of-use
5 pilot program.

6 We further recommend that the Commission
7 order a compliance phase of this proceeding in order
8 for the Company to verify that -- rates and bill
9 impacts for Rate Option 2.

10 Finally, electric vehicles and
11 conservation can co-exist. That is what we are trying
12 to test in this pilot. If parties feel that the rate
13 options in our two tiers are too similar, we could
14 easily tweak those tiers in the compliance filing.

15 What we are trying to avoid in our
16 proposal -- in the compliance filing that we
17 recommended --

18 What we are trying to avoid in our
19 proposal is ratepayer impact, both by encouraging
20 electric-vehicle owners to shift charging to off-peak
21 periods and to also reducing load overall, both of
22 which put downward pressure on rates.

23 Thank you. That concludes my testimony.

24 MS. HAYES: Utah Clean Energy will first
25 move the admission of the direct, rebuttal, and

1 surrebuttal of testimony of Sarah Wright, then make
2 her available for cross-examination.

3 HEARING OFFICER: They're admitted.

4 Mr. Solander.

5 MR. SOLANDER: Thank you.

6

7

CROSS-EXAMINATION

8 BY MR. SOLANDER:

9 Q. Could you turn to Page 9 of your
10 surrebuttal testimony?

11 A. I'm there.

12 Q. Thank you.

13 On Line 37 you're referencing the
14 off-peak --

15 A. Wait, I must be -- oh. I probably have
16 bad labels. On 9 of my surrebuttal?

17 Q. Yes, starting at Line 137.

18 A. Okay. I thought you used a different line
19 number.

20 Q. You're referencing the off-peak rate of
21 3.4 cents, and you say,

22 "Such a low rate for the majority of
23 hours could lead to customer
24 decisions to invest in more
25 electricity-consuming devices and use

1 **more electricity at economically**
2 **inefficient and unsustainable**
3 **levels"; is that right?**

4 A. Yes, that's true.

5 **Q. Does electricity a consumer uses in a**
6 **month, after the 800-kilowatt hour, cost the Company**
7 **more to produce?**

8 A. When we implemented tiered rates back in
9 2001, we looked at a number of factors, including the
10 marginal cost of new resources; so if new resources
11 are added, then it does impact rates.

12 **Q. That's not what I asked.**

13 **I said: Does the electricity a consumer**
14 **uses in a one-month period, after an arbitrary amount,**
15 **cost the Company more to produce?**

16 A. In the short-term, I can't speak to that.
17 It depends on if you have to go to the market and
18 what's happening with the market at that time.

19 **Q. But in fact, if the electricity is used**
20 **off peak, it would cost the Company significantly less**
21 **to produce, would it not?**

22 A. It would cost them less, then, yes.

23 **Q. Yes. And that's regardless of how much**
24 **the customer has already used that month?**

25 A. In the short-term. If markets are -- have

1 availability.

2 Q. Okay. But isn't it true, then, that if
3 the -- that the off-peak use prices are covering the
4 variable cost of energy as the Company proposes,
5 right?

6 A. According to your worksheets. I cannot --
7 I can't speak to them.

8 Q. And would you agree, though, that off-peak
9 consumption is not contributing to the need for
10 investment in new generation?

11 A. Well, think back to our electric home rate
12 that we had years ago. In the long run you encourage
13 people to build electric homes and offered them
14 cheaper rates, and then we had to raise those rates.
15 So you have to think of short term and long term.

16 Q. But isn't it true that if we're covering
17 the variable cost of energy, and off-peak consumption
18 is not contributing to the need for investment in new
19 generation, and by definition that off-peak usage is
20 not economically inefficient?

21 A. So you can't say that if we build off-peak
22 load, that you won't have to build, invest -- make new
23 investments going forward, and that's what we're
24 trying to balance: long-term and short-term costs.

25 Q. Your proposal isn't based on cost-based

1 rate-making, principles, though, is it?

2 A. We used your worksheets and -- to develop
3 cost, to meet your cost of service. Maybe what you're
4 saying is that your current rates base aren't -- you
5 know, we used your worksheet to develop this proposal.

**6 Q. Does tiered pricing have any basis in
7 cost-rate-based rate making?**

8 A. Well, we -- the idea is that you consider
9 tiered rates, you consider the marginal cost of new
10 investments, and you balance that over time.

11 I remember I was on the stand in one case
12 where someone -- where it was --

13 If everyone used the lower amount of
14 energy, costs would be cheaper over the long run,
15 because you wouldn't have to build new investments.

16 Q. So is that the same as a "No"?

17 A. No, it isn't. Ask me again and I'll try
18 to answer more clearly.

**19 Q. Your pricing proposal with the tiered
20 rates is not based on cost-based rate-making
21 principles, is it?**

22 A. I used your spreadsheet and balanced the
23 cost through the tiers, so then are your current rates
24 not based on cost-based principles?

25 Q. Do you want me to put Mr. Meredith back on

1 the stand?

2 A. I mean I'm using your -- I can't answer
3 that question. I used your spreadsheets --

4 Q. Okay.

5 A. -- to calculate these rates --

6 Q. Let me ask you another question, then.

7 A. -- so that you collected your cost of
8 service.

9 Q. Wouldn't it be useful if, using the
10 time-of-use rates proposed by the Company -- wouldn't
11 it be useful to determine if usage was increased
12 during the off-peak period in order to determine if it
13 is economically inefficient?

14 A. Please ask that again.

15 Q. Wouldn't it be useful to test whether the
16 time-of-use rates proposed by the Company would result
17 in higher usage during the off-peak period in order to
18 determine if that usage is economically inefficient?

19 A. I can't answer that question.

20 Q. So in your testimony -- and I think in
21 your summary, you also stated that we're only layering
22 the pricing on to the tiered rates that the customer
23 is already well accustomed with -- or accustomed to
24 and familiar with. Is that a fair summary?

25 A. Yes, on to tiered rates. Not the exact

1 rates, but yes, on to tiered rates.

2 **Q. Have you done any studies on how well**
3 **customers are, quote, accustomed to and familiar with**
4 **tiered pricing?**

5 A. I'm not sure how much you could speak to
6 that, but I know customers that understand that the
7 more you use the more you pay.

8 **Q. Have you presented any evidence that the**
9 **average customer is aware how tier pricing affects**
10 **their bill?**

11 A. No, I have not.

12 **Q. Do you believe that any decrease in rates**
13 **is not in the public interest?**

14 A. No, I propose a decrease in rates.

15 **Q. If cost decrease or lowers in certain**
16 **periods, do you agree that those savings should be**
17 **passed on to customers?**

18 A. If you file a rate case. If we are saving
19 money, then they would be passed on to customers.

20 **Q. On Page 12 of your testimony you state**
21 **that --**

22 A. On surrebuttal?

23 **Q. I'm sorry, yes. Surrebuttal. Line 182.**

24 A. Okay.

25 **Q. "EV owners will save money on a TOU**

1 **tiered rate if they charge off peak."**

2 A. Yes.

3 Q. **And is that comparing the savings to a gas**
4 **vehicle?**

5 A. To a gas vehicle or to your current rates.

6 Q. **But they would not save as much when**
7 **compared to the Company's proposed rates; is that**
8 **correct?**

9 A. A difference of four dollars. You know,
10 electric-vehicle owners already know that they save
11 money with electricity as compared to gas, so yes,
12 there's a difference of four dollars.

13 MR. SOLANDER: Thank you. That concludes
14 my questions.

15 HEARING OFFICER: Mr. Jetter, anything?

16 MR. JETTER: I have no questions. Thank
17 you.

18 HEARING OFFICER: Mr. Snarr.

19 MR. SNARR: I have no questions.

20 HEARING OFFICER: Mr. Mecham?

21 MR. MECHAM: Nor do I.

22 HEARING OFFICER: Ms. Gardner.

23 MS. GARDNER: Yes, we do have a few
24 questions for Ms. Wright.

25 HEARING OFFICER: Go ahead.

1 CROSS-EXAMINATION

2 BY MS. GARDNER:

3 Q. Ms. Wright, do you agree that adding
4 tiered rates to a time-of-use rate designed for this
5 pilot has the effect of confusing customers?

6 A. I agree that it's -- it adds a new
7 communication element that will be necessary, yes.

8 Q. And I believe you said in your testimony
9 and today, that customers are used to tiered rates; is
10 that correct?

11 A. Yes, we've had them since about 2001.

12 Q. Is it fair to say that electric-vehicle
13 customers are not used to tiered rates plus
14 time-of-use rates?

15 A. Yes.

16 Q. And the idea of a time-of-use rate for
17 purposes of this pilot, as we've heard from the
18 Company, is to incent charging during off-peak hours,
19 correct?

20 A. Yes. And if you're paying three or more
21 times more, I think that would, regardless if you have
22 tiers, encourage people to charge off peak.

23 Q. But the idea of the time-of-use pilot is
24 to encourage this off-peak charging?

25 A. Well, when you do rate design there's --

1 you're always balancing different objectives, and then
2 you can look upon price principles. One of them is
3 conservation, so we looked at trying to balance all
4 the principles for rate design, including
5 conservation, and we think that having -- it will
6 encourage people to charge off peak, and we'll be able
7 to study not just the impacts of the tiered rate, but
8 also communication. How do you communicate that?

9 Q. Okay. Let me try this another way: Would
10 you agree that one of the stated purposes of using a
11 time-of-use rate for this pilot is to encourage EV
12 owners to charge during off-peak periods?

13 A. Yes, I stated that.

14 Q. Okay. And because they pay less to use
15 energy --

16 Well, and the reason why they're charging
17 during these off-peak periods is because they're
18 actually charged less to do so during those times,
19 correct?

20 A. Or dramatically more if they don't, yes.

21 Q. But if they're charging off peak, they are
22 paying less, in fact, than they were on peak, correct?

23 A. Yes, that's correct.

24 Q. Okay. And this, in turn as we've heard
25 from the Company, helps the Company avoid or delay

1 costly investments and infrastructure over time,
2 correct?

3 A. Yes. Both conservation and shifting peak
4 avoid invest- -- investments.

5 Q. But what we've heard from the Company
6 today specifically, is that a time-of-use rate can
7 help them avoid these costly investments by shifting
8 use to off-peak times, correct?

9 A. Yes, I would agree. That's one principle.

10 Q. Okay. And the idea of a tiered rate, as
11 you stated today on the stand, is that you actually
12 pay more for the energy you use, correct?

13 A. Yes.

14 Q. But under your proposal, even if an EV
15 owner is following the time-of-use guidelines as laid
16 out by the Company, they will in fact pay more, if
17 they hit your top tier, correct?

18 A. Yes. But they'll pay less than they
19 currently pay than -- under the current rates.

20 Q. And when you say what they currently pay,
21 are you referring to the current tiered rates that we
22 have in place today for residential customers?

23 A. Yes. And they'll even pay less than the
24 first tier of our current rates.

25 Q. Okay. But under your proposed combination

1 rates -- sort like a hybrid rate, right, where we have
2 a time-of-use plus a tiered rate -- if an EV owner is
3 following sort of the guidelines of the time-of-use
4 pilot and they're actually charging off peak when
5 energy is cheaper, if they hit your top tier they will
6 pay more?

7 A. Yeah, they'll pay maybe four dollars more.

8 Q. Would you agree that that could possibly
9 create a disincentive for certain EV owners to be
10 charging --

11 A. No, I definitely would disagree. I mean
12 they're saving significantly from a gasoline vehicle,
13 and I don't think that four dollars a month, if you're
14 saving \$50 on gasoline, would discourage people from
15 an electric vehicle, no.

16 Q. Do you feel at a minimum, though, it could
17 create confusing messages to an EV owner?

18 A. No. I mean it's pretty simple: You pay
19 more when you charge on peak, and you save more, the
20 more you conserve in all hours.

21 Q. Okay. However -- I -- actually I'm still
22 having a hard time understanding how this creates a
23 very clear incentive to an EV owner who is vigilant
24 about charging their car during off-peak hours and is
25 wanting to save money; because if they are in fact

1 using a lot of energy, under your tiered rate, it
2 doesn't really matter if they're charging off rate,
3 correct; they'll still be dinged for that?

4 A. I don't call that a ding; I call that
5 smart ratemaking.

6 Q. But do you agree that they'll pay more?

7 A. I have told you like six times they'll pay
8 four dollars more.

9 Q. I appreciate your patience but this is all
10 a part of getting the answers correct for our record.

11 A. Good, I'm glad.

12 MS. GARDNER: I think with that, I think
13 I've clarified my questions and answers with
14 Ms. Wright.

15 I appreciate your time. Thank you.

16 HEARING OFFICER: Thank you, Ms. Gardner.
17 Anything else, Ms. Hayes?

18 MR. HALSO: (By telephone) This is Joe
19 Halso of the Sierra Club. Can you hear me?

20 HEARING OFFICER: Yes.

21 MR. HALSO: I have no questions for this
22 witness, your Honor, and don't expect to have any
23 during this hearing, but I did want to seize this
24 moment to make note that I'm present on the line and
25 outside of today's hearing, so thank you for your

1 indulgence in letting me participate.

2 HEARING OFFICER: You're certainly welcome
3 to be here, Mr. Halso. So you wish to officially
4 enter an appearance, then?

5 Mr. Halso?

6 MR. HALSO: Can you hear me?

7 HEARING OFFICER: Yes.

8 MR. HALSO: Yes, I do. Also on behalf of
9 the Sierra Club located at 1536 Wynkoop Street,
10 Suite 312 in Denver, Colorado 80202.

11 REPORTER: Would you please spell your
12 name.

13 MR. HALSO: Yes. The first name is Joe,
14 J-o-e, and Halso, H-a-l-s-o.

15 HEARING OFFICER: And Mr. Halso, we're
16 nearing the conclusion, I think, of testimony today,
17 and you haven't had an opportunity to examine any
18 witnesses. I imagine there would be some rather
19 vigorous objection if we re-hash material, but we
20 should discuss it if there's a desire.

21 Are you comfortable with us proceeding
22 from this point forward without recalling any
23 witnesses?

24 MR. HALSO: Yes, I am, your Honor.

25 I've been listening in since the outset

1 and found an opportunity to just jump in. And the
2 only thing I would offer is that I would be happy to
3 make a statement on behalf of the Sierra Club with
4 respect to the stipulation and partial settlement,
5 which we did join, although I know that window has
6 passed.

7 But I don't have any questions for
8 witnesses, and we do not have witnesses to offer
9 today.

10 HEARING OFFICER: Okay. Thank you,
11 Mr. Halso.

12 Ms. Hayes, I'm sorry. Did you say there
13 was nothing else?

14 MS. HAYES: Just a momentary redirect
15 if --

16 HEARING OFFICER: Go ahead.

17 MS. HAYES: -- that's all right.

18

19 REDIRECT EXAMINATION

20 BY MS. HAYES:

21 **Q. Ms. Wright, you mentioned at one point**
22 **about balancing objectives and rate design, and**
23 **Mr. Solander asked some questions about energy costs.**
24 **Is cost causation the only rate-making principle?**

25 A. No, it is one of the rate-making

1 principles that you need to balance.

2 MS. HAYES: No further questions.

3 HEARING OFFICER: Thank you.

4 Ms. Wright, I just have a couple.

5

6 EXAMINATION

7 BY THE HEARING OFFICER:

8 Q. So just to clarify, if I understand your
9 testimony today, is it fair -- is it a fair summary
10 that the -- pardon me, that UCE's primary concern with
11 respect to the Company's proposed Option 2 is that it
12 could create a situation where some customers could
13 enjoy a windfall?

14 A. I would say our primary concern -- and if
15 you remember our direct testimony is that we want to
16 test tiered rates, and so that's very important. And
17 I think with the tiered-rate Option 2, for customers
18 that can move their energy use off peak, I don't know
19 if it's a windfall, but they may make investments that
20 are not prudent, and if --

21 I don't know if you were here, but back in
22 2001 or before then, when we had incentives for
23 electric homes, people made investments based on a
24 rate structure that was not tenable for the long term.

25 And so we want to make sure that we're

1 sending signals to make smart decisions, not only
2 today, but for the long term; and that's why we think
3 the conservation principle needs to be balanced with
4 the incentive -- with rates to also incent electric
5 vehicles in charging off peak.

6 **Q. Does the status of this proposal, as a**
7 **pilot program that will presumably be limited in**
8 **duration, alleviate your concerns at all?**

9 A. Well, that's why we think we should be
10 testing a tiered rate, because it is a pilot program.
11 How do you message it? What do you need to do? Can
12 we see savings? That's why it makes sense.

13 And some of the studies -- and Ms. Murray
14 mentioned that, you know -- the Rocky Mountain
15 Institute Report suggests that we need to study
16 conservation signals in time-of-use rate pricing.

17 HEARING OFFICER: Okay. Thank you,
18 Ms. Wright. I have nothing else.

19 MS. WRIGHT: Thank you.

20 HEARING OFFICER: Ms. Hayes, no other
21 witnesses?

22 MS. HAYES: No other witnesses. Thank
23 you.

24 HEARING OFFICER: Ms. Gardner.

25 MS. GARDNER: WRA calls Mr. Kenneth L.

1 Wilson to the stand.

2 HEARING OFFICER: Mr. Wilson, you're still
3 under oath.

4 MR. WILSON: Yes, sir.

5

6 REDIRECT EXAMINATION

7 BY MS. GARDNER:

8 Q. Mr. Wilson, have you prepared a brief
9 summary of your testimony today?

10 A. Yes. Yes.

11 Q. Will you please go ahead and provide that
12 summary to this Commission?

13 A. Yes. Thank you.

14 So electric vehicles are coming; they are
15 being slowly adopted now but we believe that this will
16 increase over time, and we encourage that. We think
17 that's a very good idea for many many reasons that I
18 won't go into. But as an engineer I'm concerned about
19 the impact that will have on the utility -- their
20 generation fleet, their distribution, their
21 transmission -- and that's why we really want to
22 encourage smart charging of these vehicles at off-peak
23 hours.

24 And this pilot is an excellent way to see
25 how customers will change their charging behavior

1 based on time-of-use rates. And so we are very
2 encouraged that this pilot is going to be conducted,
3 and our sole objective is to make sure that the pilot
4 comes up with results that are statistically
5 significant, and can be used in future rate cases to
6 inform the Commission about how they might want to
7 design rates for everybody in the future.

8 With that in mind, I won't -- I had some
9 more preamble that I was going to do but I don't think
10 that I need to do that.

11 I think I'll focus on kind of the issue
12 that we're trying to grapple with here, which is
13 whether to go with what I call a clean time-of-use for
14 Option 1 and Option 2, as proposed by Rocky Mountain
15 Power, or whether to layer in a tiered-rate structure
16 on to one of those options.

17 And I guess what I would like to say
18 primarily about that -- and I think Mr. Meredith in
19 his summary gave a pretty good explanation of his
20 concern -- but I wanted to say that I have been
21 involved in similar studies for almost 40 years.

22 I was at Bell Labs for 18 years, and
23 principally in the network performance group, and we
24 actually did a lot of studies that looked at how
25 customers reacted to various issues in the

1 telecommunications network -- and while it's not
2 exactly the same as energy, the statistical properties
3 of the study are very similar -- and I had Ph.D.
4 statisticians working for me helping to design studies
5 of various types.

6 So my concern is that we come up with a
7 very statistically-valid study. And this type of
8 study, to the best my knowledge, has not been done in
9 any other state, so we really have a golden
10 opportunity, not only to show something to the whole
11 nation, but also specifically to see what happens in
12 Utah, when electric-vehicle owners have the
13 opportunity to use different rates.

14 And what we want is really to get some
15 results that we can make very valid conclusions
16 against, and you heard Mr. Meredith express his
17 concerns.

18 I was pointed to one section of my
19 surrebuttal to -- by the Division. In that
20 surrebuttal I presented a graph that was in a Rocky
21 Mountain Institute study, and there are several things
22 that we can kind of see in that, and based on that
23 graph I said, "Well, maybe they'll address some
24 concerns."

25 We could lower the 10-to-1 ratio a little

1 bit and still get significant results, and I still
2 think that's true. Either 7-to-1 or 6-to-1 would
3 probably be a good place to end up, though the 10-to-1
4 will certainly get us to a point.

5 The real issue here is that we need two
6 points, so we can make some conclusions about if you
7 drew a line between those points, where would it --
8 what would it look like on a similar graph to the one
9 that I presented?

10 And my concern is that if we only have one
11 clean time-of-use point to put on a graph, it's kind
12 of out in space. We need a second point that is the
13 same except for the ratio, in order to really see
14 what's happening when we move to -- from what I call a
15 moderate 3-to-1 to a more aggressive 10-to-1, or
16 something a little smaller. And I think that's very
17 important; otherwise I'm afraid we won't be able to
18 make as conclusive statements as we could with the
19 cleaner proposal.

20 The other issue I wanted to touch on is
21 the issue of confusion of customers. And I recently
22 testified in two rate cases in Arizona -- one for
23 Tucson Electric Unisource, and the other for Arizona
24 Public Service -- and there was a great deal of
25 concern -- these were general rate cases, not pilot

1 projects -- but there was a tremendous amount of
2 discussion about time-of-use rates, and there are some
3 big pilots that have been going on there with
4 time-of-use rates for some time, and no one was really
5 advocating to layer on tiers into those time-of-use
6 rates.

7 And their concern was communication to the
8 customer and the customer's understanding of what
9 happens when you get multiple variables going on with
10 their bill.

11 And I think that's particularly important
12 with this pilot with customers who have new electric
13 vehicles. We want them to use those vehicles without
14 having something in their head saying, "Oh, I know
15 that if I charge more and use it more, it will cost a
16 little more." And that concerns me.

17 While I don't have absolute statistics to
18 back that up, it's got to be something of a
19 psychological issue to a customer. They go in the
20 garage, they have an electric vehicle and a gasoline
21 vehicle, "Which do I use?" And if I know that it
22 costs a little more to charge more and use more with
23 the electric vehicle, that could impact what I do.

24 So I think the confusion issue is a big
25 one that we should avoid for the pilot.

1 When we get to a general rate case,
2 eventually, here, I think then we will need to very
3 carefully -- very carefully look at all of these
4 issues, and see what makes sense for all customers.

5 I doubt that there will be any appetite
6 for a separate rate class for electric-vehicle owners,
7 though that could happen. But if someone could switch
8 rate classes by buying an electric vehicle, you don't
9 want to create some gaming there. And I'm afraid if
10 you had separate rate classes that could happen.

11 I think that -- I mean the idea of
12 time-of-use rates with tiered rates is an interesting
13 one, and if we had more -- more money for this study,
14 I would recommend that we do essentially what Rocky
15 Mountain Power is proposing, and also have two sets of
16 customers that were on time-of-use with tiered rates.
17 Then we would get two sets for each of those types of
18 rates, and then we could do some very good
19 comparisons.

20 But given that we have limited funds and
21 we don't want to overspend the budget, I think it's
22 much more prudent to select one of those types of rate
23 structures and not try to mix and match. I think if
24 we mix and match we will have problems when we try to
25 analyze this.

1 So I believe that's all I would say in
2 summary. Thank you.

3 Q. Mr. Wilson, I am going to ask you just one
4 quick follow-up question.

5 We have had two witnesses today,
6 Ms. Murray with the Office and Ms. Wright with the
7 Utah Clean Energy, reference your Attachment A to this
8 most recent exhibit -- I believe it was WRA
9 Exhibit 4.0 -- and that would be the Rocky Mountain --
10 I'm sorry, the Rocky Mountain Institute report -- and
11 they mention that in that report that -- that there
12 are some concerns regarding potential conservation
13 impacts from time-of-use rates.

14 Ms. Wright says that -- suggests that we
15 need to better understand conservation price signals
16 included in these rates, and this is included in that
17 report. Can you address the concerns that were raised
18 by both of these witnesses today?

19 A. Yes.

20 I mean it is a very good question as to
21 how the best design rates for electric-vehicle
22 users -- and one day we may be going back to
23 advocating for heating with electricity instead of
24 natural gas, but without a larger study -- meaning
25 more -- more groups of customers on different rate

1 classes -- I just don't see how we can get at what we
2 would need to get at to really understand how energy
3 efficiency is impacted by different time-of-use-type
4 rate structures.

5 Further, Western Resource Advocates has
6 been studying the issues of rate structures for
7 several years, looking at time of use, looking at
8 demand charges. And while we know that the Regulatory
9 Assistance Project has said that there is some
10 additional advantage in energy efficiency, in saving
11 energy from having time-of-use plus layering on a
12 tier, we're pretty convinced, at Western Resource
13 Advocates, that we will get a lot of energy efficiency
14 from simple time-of-use rates; that customers will
15 become very aware of when they're using energy, and
16 that that will cause them to reduce their overall
17 energy use.

18 And that's been the discussion in Arizona,
19 in these other cases, that you do get a lot of
20 savings. Maybe eventually there are other ways to get
21 even more, but we think that simple is better, going
22 forward at this time.

23 **Q. Mr. Wilson, does that conclude the**
24 **summary of your position today?**

25 **A. It does.**

1 Q. Do you have any other recommendations for
2 the Commissions that are not included in your
3 testimony?

4 A. I do not.

5 Q. Does that conclude your summary?

6 A. Yes.

7 MS. GARDNER: Thank you.

8 Mr. Wilson is available for cross.

9 HEARING OFFICER: Mr. Solander?

10 MR. SOLANDER: No questions, thank you.

11 HEARING OFFICER: Mr. Jetter.

12 MR. JETTER: Actually I do have a just a
13 few brief questions.

14

15 CROSS-EXAMINATION

16 BY MR. JETTER:

17 Q. And this was actually regarding the issue
18 that we had -- you had mentioned earlier, which is in
19 your surrebuttal testimony on Page 5.

20 There's a chart that is included from the
21 Rocky Mountain Institute report -- and I don't know if
22 you have that in front of you --

23 A. I do.

24 Q. Is your copy by chance in color?

25 A. It is.

1 Q. Okay. So there's a combination of green
2 and blue points on that chart, and as I understand
3 that, is it correct that the blue points to the right
4 are based on a modified time-based rate, which are --
5 I think the report described it as supercritical
6 high-load hours that typically fall between five and
7 22 days per year?

8 A. Yes, that's my understanding.

9 Q. And kind of where I'm going with this
10 question is: If we look on the chart down to the
11 10-to-1 peak/off-peak ratio, that's pretty much
12 exclusively into the territory of those sort of
13 critical off-/on-peak rates, and there are no standard
14 time-of-you price -- time-of-use pricing -- or the
15 clean time-of-use pricing, with that extreme of a
16 ratio; is that right?

17 A. Yes, that's my understanding. At least
18 from the date that that was used to create this chart.

19 Q. Okay. And if this chart is --
20 I guess what I'm kind of -- follow up with
21 that would be that it sounds like my understanding is
22 correct, and your recommendation would be that the
23 10-to-1 rate would be a little bit on the extreme end,
24 and somewhere more like 5-to-1 would be more
25 appropriate for the second option?

1 A. Well, I think, as Mr. Meredith said, we
2 want to keep the difference between the two options
3 strong enough so that we get a clear signal as to the
4 difference in customer behavior.

5 I think 6-to-1 or 7-to-1 would probably be
6 adequate, but we're kind of basing it on studies, as
7 you point out, that are not identical to what we're
8 doing.

9 In my surrebuttal I said that this chart
10 was not based on electric-vehicle time-of-use studies;
11 it was based on just general users. So we don't
12 really know how the electric vehicle users will fall
13 on this chart, and as I said a few minutes ago, that's
14 why I'd like -- I'd love to see two points rather than
15 just one point.

16 And you've pointed out that there are --
17 there is another variable in this chart that makes it
18 a little less applicable to what we're actually doing,
19 and that is that the blue dots on the chart are from
20 critical peak pricing prices and other things.

21 But what I was really doing was using this
22 chart to kind of indicate: How much of a difference
23 does it take in prices to get reaction from a
24 customer? And I think that's more interesting than
25 when those prices were available. It's just the --

1 the absolute difference in the prices.

2 And so while you have certainly a valid
3 point there, I was more interested in just the
4 absolute difference in the peak to off-peak ratio.

5 And there are a lot of things happening
6 with this curve. I don't think Rocky Mountain
7 Institute captured all of that in their -- their
8 discussion, because you could -- if you throw out some
9 of the points that are way off scale, I think you come
10 up with some different -- a little bit different
11 analysis than they did.

12 But maybe to summarize, I think it's a
13 reasonable kind of guide to look at.

14 **Q. Okay. Well, thank you.**

15 And following up just a little bit on
16 that, which is kind of what I'm kind of trying to
17 tease out, is that it seems, really, from that chart,
18 that other utilities that were studied here typically
19 don't go beyond about 4-to-1 in actual rates, and
20 10-to-1 is beyond, it looks like, anything that they
21 had come up with in their study.

22 Do you think it would be reasonable to
23 have a second time-of-use rate that is beyond the
24 limit of what would be reasonable, to try to actually
25 implement in an actual rate that's open to all

1 customers?

2 A. Well, this is not -- we're looking at a
3 pilot, not a general rate case, and I'm sure that if
4 this was a general rate case I would be analyzing this
5 in a different way, and probably advocating
6 differently.

7 But given it's a pilot, I really keep
8 going back to statistical significance. We need a big
9 enough differential that we actually get something
10 meaningful at the end of the study. And it may be
11 that even at 3-to-1 customers really shift their
12 charging pattern, but it may not. And it could be
13 that the charging pattern shift for 3-to-1 is not much
14 different from 4-to-1 or even 5-to-1. That's why we
15 need a bit of a spread, and I think 6-to-1 would be
16 the smallest I would recommend for Option 2.

17 MR. JETTER: Okay. Thank you. That's all
18 the questions I had.

19 I appreciate your time.

20 HEARING OFFICER: Mr. Snarr?

21 MR. SNARR: Thank you.

22

*

23

CROSS-EXAMINATION

24 BY MR. SNARR:

25 Q. You indicated that certain aspects of the

1 time-of-use rate pilot study here in Utah provides
2 opportunities for study that may not have been studied
3 in other states; is that correct?

4 A. That's correct.

5 Q. Now, you also referenced this Rocky
6 Mountain Institute paper where certain things have
7 been studied in other states. And indeed on
8 Page 28 -- you've been referencing it -- that captures
9 some of the information from other studies that have
10 been made, at least as it relates to incorporating
11 differentials and time-of-use rates; is that correct?

12 A. Yes.

13 Q. And you've referenced in your testimony
14 some of those conclusions, conclusions related to the
15 10-to-1 ratio, conclusions related to a 5-to-1 ratio,
16 and conclusions with respect to a 2-to-1 ratio; is
17 that right?

18 A. That's correct.

19 Q. So a study focused on different
20 differentials is basically repeating what you've
21 already got resourced here in your Rocky Mountain
22 Institute study; is that correct?

23 A. Not with electric vehicles, no. But with
24 studies that were not directed at just general energy
25 users, then this is a better guide.

1 Q. Do you suspect that the conclusions
2 reached in the Rocky Mountain Institute paper with
3 respect to users generally on time-of-use rates, would
4 significantly differ from electric-vehicle users?

5 A. I don't know --

6 Q. Okay.

7 A. -- and that's what I would like to know.

8 Q. Okay. Isn't it true that there's not been
9 a study that you're aware of that compares a
10 time-of-use rate with another time-of-use rate having
11 tiered or inclining blocks?

12 A. I think there has been some of that but I
13 haven't seen the data. I've heard -- I mean I've
14 listened to several RAP -- webinars, and that's the
15 rate -- well, RAP, and we actually hired one of their
16 people to consult with us on rate design a bit, and I
17 don't have access to that data offhand.

18 Q. You were referencing studies to be
19 meaningful. If we studied two different ideas or two
20 different points of information that were somewhat the
21 same, the study might not be effective because you
22 couldn't see the difference; is that right?

23 A. That you wouldn't -- yes, correct, you
24 would not get a statistically-significant difference
25 between the two, so you kind of wasted one of your

1 points.

2 Q. But with respect to general usage and the
3 information you provided here out of Page 28 of the
4 Rocky Mountain Institute, the effect of the rate
5 differential has been studied and somewhat has an
6 answer as you've played out in your testimony; isn't
7 that true?

8 A. Yes. I mean the higher the differential
9 in general, the more shifting of energy to off peak
10 from on peak. Yes, I think we could conclude that.

11 Q. So if we were to put forth a study
12 opportunity here in the state of Utah with its
13 electric-vehicle program where we were studying one
14 time-of-use rate involved -- which incorporates a
15 particular rate differential that seems to be the best
16 candidate, as you've recommended, out of the Rocky
17 Mountain Institute; and on the other hand, studied a
18 time-of-use rate that has tiers, wouldn't that provide
19 a great opportunity as a study -- as a study of these
20 two different concepts, and to see whether or not
21 there is a difference in how the two rates would
22 compare?

23 A. No. I disagree with that. As I said, if
24 we could add two more groups of customers to this
25 study then we could do that, and I would be

1 comfortable -- very comfortable. That would be a
2 great study.

3 But if we're limited to essentially three
4 groups that control an Option 1 and Option 2, then I
5 would disagree with that.

6 I think it either has to be a clean
7 time-of-use for both of Option 1 and Option 2, or it
8 has to be tiered plus time-of-use for both of them,
9 which I don't find as valuable, because I -- I think
10 there's confusion between which of those variables is
11 really causing the shift.

12 **Q. With respect to confusion, you've studied**
13 **the surrebuttal of Utah Clean Energy witness Sarah**
14 **Wright; isn't that true?**

15 **A. Yes.**

16 **Q. And isn't it true that her current**
17 **proposal only really has two TOU rate alternatives:**
18 **one with tiers and one without?**

19 **A. Yes.**

20 **Q. And with respect to the one with tiers,**
21 **there would be four different energy rates stated for**
22 **service throughout the year; isn't that correct?**

23 **A. Yes.**

24 **Q. And isn't it true that the current -- that**
25 **the applicable residential rates includes tiers?**

1 A. Yes.

2 Q. And with respect to those tiers, isn't it
3 true there's three different energy rates that apply
4 during the summer?

5 A. Yes.

6 Q. And Rocky Mountain has not proposed any
7 rate design features that would encourage conservation
8 for off-peak periods where those electric vehicles
9 were given special lower rates to encourage their
10 vehicles -- to recharge their vehicles; isn't that
11 correct?

12 Do you want me to restate that?

13 A. Please.

14 Q. Rocky Mountain has not proposed any rate
15 design features that would encourage conservation for
16 off-peak time periods where those with electric
17 vehicles are given special lower rates to charge their
18 vehicles; isn't that correct?

19 A. Best of my knowledge, that's correct.

20 Q. And if the TOU pilot program were to
21 include one rate option that included tiered or
22 inclining block rates, isn't it true that that would
23 allow the usage patterns to be studied more directly
24 as it relates to whether charging vehicles in off-peak
25 periods would encourage habits that might be

1 inconsistent with energy conservation?

2 A. Well, as I said, if we had two more
3 options it would be a great idea, but I think the mix
4 and match, we're going to look at apples and oranges.

5 Q. But the mix and match, as you suggest,
6 would remove any opportunity to observe the results as
7 it relates to possible measures to encourage
8 conservation; isn't that correct?

9 A. Well, we're going -- I wouldn't quite
10 dis- -- I wouldn't quite agree with that because we
11 will have a set of customers on the existing rates
12 which have the tiered rates, so we will get to see
13 what the difference is between those. We wouldn't see
14 how time-of-use impacts that, but as I said, we just
15 don't have enough options to throw at that.

16 Q. But if you have three rates -- one that's
17 got tiers over here, two that have time-of-use
18 opportunities for service over here -- wouldn't
19 changing one of those time-of-use rates to a tiered
20 option allow us to observe both -- both the possible
21 impacts of switching to a different lower rate
22 differential, and also switching to a rate -- with a
23 lower rate but also including the tiers. Doesn't
24 three rates allow us to observe two different features
25 and study them?

1 A. No. Because I mean as you said, current
2 rate actually has three different tiers, so that's
3 different; and then we have one clean time-of-use and
4 then a time-of-use with tiers. And so we really have
5 three different -- you've got apples, oranges, and
6 pineapples or something.

7 MR. SNARR: I have no further questions.

8 HEARING OFFICER: Mr. Mecham.

9 MR. MECHAM: No questions, thank you.

10 HEARING OFFICER: Ms. Hayes?

11 MS. HAYES: Thank you.

12 Good morning, Mr. Wilson.

13

14 CROSS-EXAMINATION

15 BY MS. HAYES:

16 Q. So I'm going to turn back to the -- your
17 graph on Page -- well, I guess it's the graph from the
18 RMI report on Page 5 of your testimony -- excuse me.

19 And you -- just to follow up on what
20 Mr. Jetter was saying, you were really focused on the
21 green dots; is that correct?

22 A. No, I was looking at the whole set.
23 Actually -- actually, if they weren't colored, that's
24 kind of how -- if they were all grey, that's kind of
25 how I was looking at them, just to see the spread of

1 peak to off peak and what that did to move customer
2 behavior.

3 Q. Okay. But in the current -- the proposals
4 that -- that we're contemplating for this pilot
5 program, we're really only -- only considering what in
6 this report they would consider the time-of-use price
7 only, is that correct, because we're not considering
8 critical-peak pricing, peak-time rebates, or
9 variable-peak pricing; is that correct?

10 A. Correct as you ask it, but we are looking
11 at, you know, what's the significance of the spread --

12 Q. Okay.

13 A. -- which takes into account, in my view,
14 all of the dots.

15 Q. Sure. Okay.

16 Do you know how many of the studies
17 represented in any of these dots examined tiered
18 time-of-use rates?

19 A. No, I don't know.

20 Q. Okay. Do you know how many of these
21 studies represented in the dots evaluated
22 technology-enabled devices?

23 A. No. I don't know that.

24 Q. All right.

25 Let's talk about electric vehicles for a

1 minute.

2 With an electric vehicle, you can program
3 the car to begin charging at a set time; is that
4 correct?

5 A. Yes, that's correct.

6 Q. And that's true -- that's true of the
7 vehicle itself, regardless of the type of charger; is
8 that correct?

9 A. Yes, it's a property of the vehicle in
10 general.

11 Q. Okay. So in other words, the electric
12 vehicle is what's called a technology-enabled device;
13 is that correct?

14 A. It is, though I know there are chargers
15 that do have those kinds of capabilities as well.

16 Q. Sure. Sure. But the cars themselves are
17 technology-enabled devices?

18 A. Well, certainly. And to the best of my
19 knowledge, most or all of them do have the ability to
20 program your charging.

21 Q. Yes. Will you turn with me to Page 42 of
22 the RMI report?

23 A. I actually don't have it here.

24 Q. Oh. I think it -- okay. If it's -- if
25 it's all right, Ms. Wright has a copy --

1 A. Sure.

2 Q. -- of Page 42 that we can bring to you.

3 HEARING OFFICER: Is that in the record
4 somewhere, to which -- I can pull it up here --
5 introduced with the surrebuttal?

6 MS. GARDNER: It's Attachment A to
7 Exhibit WRA 4.0.

8 HEARING OFFICER: Thank you.

9 MR. WILSON: Excuse me. Could you repeat
10 which page?

11 MS. HAYES: Page 42.

12 MS. GARDNER: Sorry --

13 MS. HAYES: I'm looking at Page 42 of that
14 RMI report.

15 MR. WILSON: Okay.

16 Q. BY MS. HAYES: So the graph on the left
17 which -- shows peak production for basic time-based
18 rates with and without enabling technology.

19 So the lighter blue shows time-of-use
20 rates along with technology-enabled devices. So
21 looking at that graph, would you agree with me that
22 much higher savings -- for example, more than
23 double -- were achieved with technology-enabled
24 devices plus time-of-use rates, than with time-of-use
25 rates alone?

1 A. Yes. But looking at this again, the curve
2 is actually steeper on the price-enabling technology's
3 curve, which means that it's actually more important
4 to have a larger peak, off-peak ratio -- with enabling
5 technology.

6 Q. But there are results that show that even
7 at a 3-to-1 -- at a -- or around a 3-to-1 ratio, there
8 were significant savings, would you agree?

9 A. Oh, certainly.

10 Q. All right.

11 A. Certainly. But there are even more
12 savings at six- and 7-to-1, by a significant amount,
13 like 50 percent or more.

14 Q. Thank you.

15 So will you turn with me to Page 81 of the
16 Rocky Mountain Institute report.

17 A. Yes. I'm there.

18 Q. Okay. I'm not. One moment.

19 Well, will you -- this Page 81 lists some
20 conclusory recommendations. Would you -- would you
21 read those first two paragraphs.

22 A. Into the record or --

23 Q. Yes.

24 A. -- to myself?

25 So the first two bullet points?

1 **Q. No, it's just that introductory paragraph**
2 **and then that first bullet point.**

3 A. Oh.

4 Starting at "Going forward"?

5 **Q. Let me see. I -- I think so. I think**
6 **I've misplaced my Page 81, but -- yeah, "Going**
7 **forward," exactly. Thank you.**

8 A. Okay. So this is the research take-aways
9 from this paper.

10 "Going forward there are significant
11 knowledge gaps related to both time
12 based and demand charge rates that
13 the industry and researchers should
14 address. Specific topics that
15 emerged through this work include" --
16 and then I'll read the first one --

17 **Q. Uh-hm.**

18 A. -- "Evaluate rate impacts on total
19 energy consumption. The majority of
20 studies that have considered
21 customers' behavior response to
22 alternative rates have evaluated the
23 impacts on customer peak reduction,
24 but very few evaluated the impacts on
25 total energy consumption.

1 that there would be value in comparing two points,
2 correct?

3 A. Correct.

4 Q. So regardless of what ultimately happens
5 with respect to Option 2, there will be value in
6 comparing the control group against the customers who
7 participate under Option 1; is that right?

8 A. Yes, there is some value to that.

9 Q. Could we do anything with respect to
10 Option 2 that would interfere with the utility of
11 those results?

12 A. No. I've thought about that, and I guess
13 to me, if we go with the Option 2 that has the tiered
14 rates, it just I think would lack meaning to me, and
15 it would just be unfortunate. We would still have the
16 results as you said.

17 HEARING OFFICER: Okay. Thank you,
18 Mr. Wilson.

19 Ms. Gardner, anything else?

20 MS. GARDNER: Just a few clarifying
21 questions.

22 *

23 REDIRECT EXAMINATION

24 BY MS. GARDNER:

25 Q. We've heard a little bit today, both from

1 exhibits that were submitted in this -- in this
2 docket, as well as live testimony regarding some
3 research that has been done, not only by the Rocky
4 Mountain Institute, but also by the Regulatory
5 Assistance Project, correct?

6 A. Yes.

7 Q. And in both of those reports we understand
8 that there's been at least one study that we've been
9 made aware where they've looked at a combined
10 time-of-use plus tiered rate; is that correct?

11 If I need to rephrase, let me know.

12 A. Yes. Yeah, please.

13 Q. Okay. So is it true that from the
14 Regulatory Assistance Project presentation, they do
15 provide some results from a case study where they
16 looked at a time-of-use plus tiered-rate design?

17 A. Yes, I believe they have.

18 Q. And it sounds like, based on the
19 questioning we just received from Utah Clean Energy,
20 that the Rocky Mountain Institute also says that there
21 is some value to be gleaned from looking at energy
22 consumption with -- with these rate designs --
23 correct?

24 A. Oh, certainly, yes.

25 Q. Now, one of the reasons you chose to use

1 this data from the Rocky Mountain Institute was simply
2 to show the different types of rate differentials that
3 are used in time-of-use rate design; is that correct?

4 A. Yes, that's correct.

5 Q. And is it true that based on your opinion
6 of those study results that you find that somewhere in
7 the 6-to-1 or 7-to-1 differential it is appropriate
8 for this particular pilot?

9 A. Yes. And you know, what -- if you had,
10 you know, the best of all worlds, you would add a
11 whole bunch of options and do 3-to-1, 4-to-1, 5-to-1,
12 6-to-1, and you could create a very nice curve for
13 Utah.

14 And you could do the same with time-of-use
15 plus tiered rates, if you had the ability to do many
16 more options. And of course as an engineer and
17 scientist, I'd love to see that, but I understand the
18 practical, you know, constrictions on that. So you
19 know, I'm kind of -- I'm kind of advising to go with
20 the best case that we have.

21 Q. And Mr. Wilson, isn't it true that the
22 Rocky Mountain Institute results on differentials did
23 not look at electric vehicle time-of-use pilots
24 specifically, right?

25 A. To the best of my knowledge it didn't look

1 at any electric-vehicle pilot.

2 Q. So would you agree that this opportunity
3 we've been afforded by Rocky Mountain Power's proposed
4 electric-vehicle pilot project is a unique one for the
5 state of Utah, to compare the impacts of two different
6 time-of-use rates with varying differentials, and how
7 those rates will impact customer behavior?

8 A. Absolutely, for the reasons I've already
9 stated.

10 MS. GARDNER: Thank you, Mr. Wilson. No
11 further questions.

12 HEARING OFFICER: Thank you, Mr. Wilson.
13 You're excused.

14 MR. WILSON: Thank you.

15 MR. SNARR: I have one additional
16 question, just a point of inquiry.

17 Is there anywhere in the filed testimony
18 of Mr. Wilson or others that's referencing this
19 Regulatory Assistance Project?

20 MS. HAYES: It's the exhibit attached to
21 Ms. Wright's direct testimony.

22 MR. SNARR: Okay. Thank you.

23 MS. HAYES: That was Sophie Hayes.

24 HEARING OFFICER: Thank you, Mr. Wilson.

25 Anything else, Ms. Gardner?

1 MS. GARDNER: Nothing further. Thank you.

2 HEARING OFFICER: Thank you.

3 Do any of the parties have anything else
4 before we adjourn?

5 Seeing no hands and hearing nothing, we
6 are adjourned. Thank you, everyone.

7 MS. HAYES: Thank you.

8 (The hearing was concluded at 11:40 a.m.)

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REPORTER'S CERTIFICATE

I, Ariel Mumma, do certify that I am a Certified Shorthand Reporter in and for the State of Utah; that at the time and place of the hearing of the foregoing matter I appeared as reporter for the Public Service Commission of the State of Utah, and thereat reported in shorthand all the testimony and proceedings had therein; that thereafter under my direction and supervision my said shorthand notes were transcribed into typewriting, and that they constitute a full, true, and correct report of the same.

DATED at Salt Lake City, Utah, this 8th day of June, 2017.



Ariel Mumma, CSR/RPR

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